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City of Birmingham.

BUREAU OF HYGIENE & TROPICAL DISEASES
19 AUG 1927

REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR.

1926.

BIRMINGHAM:
TEMPLAR PRINTING WORKS, EDMUND STREET.

1927.

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PUBLIC HEALTH DEPARTMENT,
THE COUNCIL HOUSE,
BIRMINGHAM.

June, 1927.

MR. CHAIRMAN, LADIES AND GENTLEMEN,

The year 1926 was, as regards its vital statistics, a relatively good one.

There was a comparatively low death-rate and infant mortality rate.

There was also an absence of any excessive prevalence of epidemic disease.

Great distress and inconvenience still prevail by reason of inadequate and bad housing conditions among the labouring classes, notwithstanding the fact that strenuous efforts are being made to overcome the house shortage, which it is said is being better dealt with here than anywhere else.

Many problems are urgently calling for investigation and remedy. Far too many people suffer from preventable ailments which, in the case of children, hinder full development, and in the case of adults render them inefficient wage earners. In the vast majority of these cases ignorance and inability to appreciate the value of robust good health is the cause. This can in very many cases only be removed by educational means, for everybody must be the guardian of his own health and that of his children.

Such subjects as " The care of the teeth," "Our food," " The amount of outdoor exercise," " General cleanliness " and many similar subjects, if given sufficient attention, would immediately improve the public health.

One important step has been taken during the year in the provision of a site for hospital purposes which in extent and situation will be sufficient for generations to come, and will enable the question of hospital provision to be put on a proper basis. In course of time this will enable accommodation to be provided for the cases of serious illness which at the present time are dealt with in the home, often to the great detriment of the patient. It will save time, save life, and save sickness.

I am pleased to be able to report that the staff of the Public Health Department continues to give efficient and loyal service to your Committee and that there has been no untoward incident during the year.

I am,

Your obedient servant,

JOHN ROBERTSON,

Medical Officer of Health.

City of Birmingham

REPORT OF THE MEDICAL OFFICER OF HEALTH
For the year 1926.

SUMMARY OF STATISTICS.

Area (in acres), 43,601.

Population (Census 1921), 919,444.

Estimated by Medical Officer, 1926, 961,222.
Estimated by Registrar-General, 1926, 934,300.

Number of inhabited houses (1921), 190,459.

Number of families or separate occupiers (1921), 203,813.

Rateable value, £5,814,738.

Sum represented by a penny rate, £21,757.

Extracts from vital statistics of the year 1926:—

Births—Legitimate, 17,325. } Birth Rate, 18.7.
Illegitimate, 607. }

Deaths, 10,847. Death Rate, 11.3.

Number of women dying in, or in consequence of, childbirth. From sepsis, 41. From other causes, 33.

Deaths of Infants under one year of age per 1,000 births:—
Legitimate, 70. Illegitimate, 150. Total, 73.

Deaths from Measles (all ages), 78.

Deaths from Whooping Cough (all ages), 128.

Deaths from Diarrhœa (under two years of age), 201.

I.—STATISTICS.

POPULATION.

In view of the abnormal housing and industrial conditions it is desirable, in considering the health statistics for a year separated from the Census by five years, briefly to review the population figures upon which most of the statistics are based.

This is the more important at present because the Registrar General has estimated the population at 934,300, or nearly 27,000 less than the local estimate, which is 961,222.

Between the Census of 1911 and that of 1921 the excess of births over deaths corresponded very closely to the increase in population.

During 1926 this excess was a normal one, viz., 7,085, yet the Registrar-General's estimate of the population is 11,600 less than in 1925.

Everything indicates that the Registrar General's estimate is below what it should be. If the new houses in Birmingham occupied since 1921 be taken as containing 4½ persons per house, and the figure thus obtained be added to the Census population, there would be in 1926 a population of over one million.

MARRIAGES.

The marriage-rate in Birmingham has been as follows:—

1881	16.2
1891	19.2
1901	18.8
1911	19.2
1921	15.9
1922	15.5
1923	16.3
1924	16.0
1925	16.9
1926	16.0

BIRTHS.

The number of babies born in 1926 was 17,932, equal to a birth-rate of 18.7 per 1,000.

Birth-Rates per 1,000.

	Birmingham.	England and Wales.
1901-1905	30.7	28.2
1906-1910	28.3	26.3
1911-1915	25.9	23.6
1916-1920	22.1	20.1
1921-1925	20.8	19.9
1917	19.7	17.8
1918	19.4	17.7
1919	20.9	18.5
1920	27.6	25.5
1921	24.1	22.4
1922	21.5	20.4
1923	20.4	19.7
1924	19.2	18.8
1925	18.8	18.3
1926	18.7	17.8

During the past 25 years the birth-rate in Birmingham has fallen by 39 per cent., while the death-rate has fallen 29 per cent.

In England and Wales the birth-rate has fallen 35 per cent. during the same period while the death-rate has fallen 24 per cent.

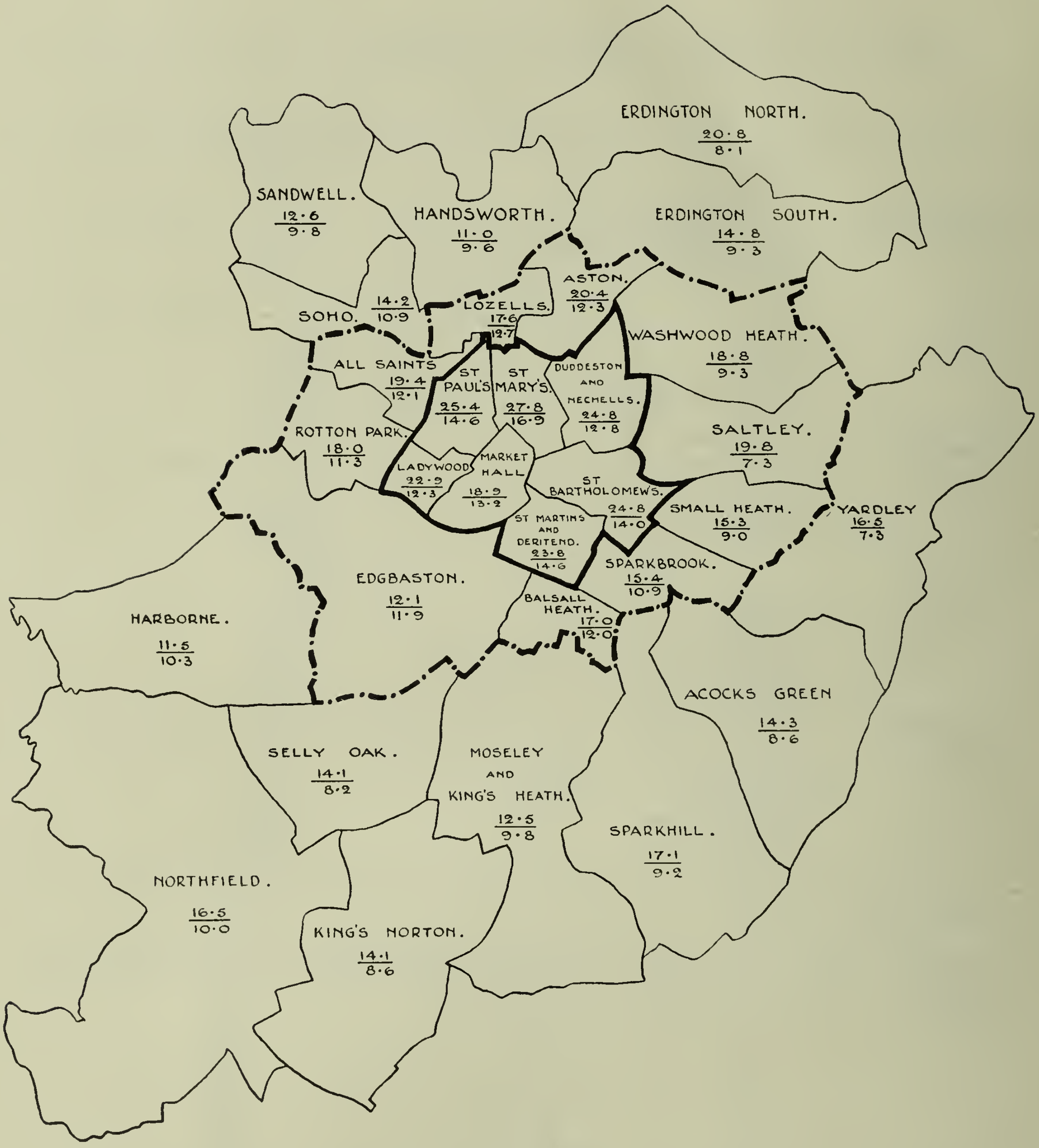
This means that if the same rates of decrease continue, in a comparatively few years the population of Birmingham will be one which will no longer be maintained by its natural increase (excess of births over deaths).

The birth-rates in the different wards were as follows:—

	Ward.	Birth-rate. 1926	
Central Wards	St. Paul's	25.4	Average 24.1
	St. Mary's	27.8	
	Duddeston and Nechells	24.8	
	St. Bartholomew's	24.8	
	St. Martin's and Deritend	23.8	
	Market Hall	18.9	
	Ladywood	22.9	
Middle Ring	Lozells	17.6	Average 17.4
	Aston	20.4	
	Washwood Heath	18.8	
	Saltley	19.8	
	Small Heath	15.3	
	Sparkbrook	15.4	
	Balsall Heath	17.0	
	Edgbaston	12.1	
	Rotton Park	18.0	
	All Saints	19.4	
Outer Ring	Soho	14.2	Average 14.6
	Sandwell	12.6	
	Handsworth	11.0	
	Erdington North	20.8	
	Erdington South	14.8	
	Yardley	16.5	
	Acock's Green	14.3	
	Sparkhill	17.1	
	Moseley and King's Heath	12.5	
	Selly Oak	14.1	
	King's Norton	14.1	
	Northfield	16.5	
	Harborne	11.5	

This table shows that the birth-rate in the central wards was 24.1 in 1926, while in the suburban wards it was 14.6.

The diagram on page 10 shows the position of the various wards and the division into "Central," "Middle" and "Outer." On this diagram the birth-rate for 1926 is shown by the upper, and the death-rate by the lower, of the two figures.



ILLEGITIMACY.

During 1926 there were 607 illegitimate births belonging to Birmingham, or 3.4 in every 100 babies born.

The corresponding number in each year since 1921 is shown below.

	Number of illegitimate babies born.	Percentage on Total Births.
1921	823	3.7
1922	719	3.6
1923	610	3.2
1924	583	3.2
1925	589	3.3
1926	607	3.4

It will be noted that during the past four years the rate has been a low one.

Of the 607 illegitimate babies 574 were born in the City and 33 in other places to which the mother had gone for confinement.

Of the 574 babies born in the City no less than 244 were born in institutions, 215 being in Poor Law Hospitals.

The infant mortality rate among these illegitimate babies was 150 per 1,000 as compared with 70 per 1,000 for the legitimate.

Several institutions exist in Birmingham to deal with unmarried mothers and their infants. For the most part these infants are born healthy. It must therefore be assumed that carelessness and wilful neglect play a part in producing so high a mortality as twice the normal figure.

During 1926 an Act was passed which is expected to secure the adoption of a larger number of these infants, as it makes it possible for the adoption to be carried out in such a way that it becomes absolutely binding.

The following statement shows to some extent the manner in which the illegitimate babies born in 1926 were provided for:—

Total number reported in 1926	574
Number still remaining in infirmaries, etc.	72
Number who died before a visit was paid	56
Number removed before a visit was paid	58
Number visited once at least	388
Father and mother living together	127
Father making an allowance—	
(a) Under Order	41
(b) Voluntarily	46
Father not contributing	150
No information	24

DEATHS.

There were 10,847 deaths registered during 1926. In 1925 the number was 11,102, and in 1924, 11,181.

Of these deaths there were 5,590 males, 5,257 females.

Death-Rates.

The death-rates represented by the above figures are as follows:—

Total 11.3. { Females, 10.4 per 1,000.
Males, 12.3 per 1,000.

The striking fall in the death-rate during the past 50 years is shown in the following table.

Death-Rates in Birmingham and England and Wales.

		Birmingham.	England and Wales.
1871-1875	(Old City)	25.2	22.0
1876-1880	,,	22.8	20.8
1881-1885	,,	20.7	19.4
1886-1890	,,	20.2	18.9
1891-1895	,,	20.3	18.7
1896-1900	,,	20.5	17.7
1901-1905	(Present Area)	16.5	16.0
1906-1910	,,	15.0	14.7
1911-1915	,,	14.6	14.3
1916-1920	,,	13.4	14.5
1921-1925	,,	11.5	12.2
1916	,,	13.5	14.4
1917	,,	12.6	14.4
1918	,,	15.2	17.6
1919	,,	13.0	13.7
1920	,,	12.6	12.4
1921	,,	11.3	12.1
1922	,,	12.1	12.8
1923	,,	11.0	11.6
1924	,,	11.6	12.2
1925	,,	11.7	12.2
1926	,,	11.3	11.6

Only once has a lower death-rate than that of 1926 been recorded. This was in 1923 when the rate was 11.0 against 11.3 last year.

The Birmingham death-rate compares well with that of the other great towns, as seen from the statement appended.

Comparative Death-Rates in Nine Largest Towns.

(*Registrar General's Figures.*)

London	11.6 per 1,000
Glasgow	15.0 ,,
Birmingham	11.3 ,,
Liverpool	13.3 ,,
Manchester	13.0 ,,
Sheffield	11.1 ,,
Leeds	12.5 ,,
Edinburgh	13.5 ,,
Bristol	11.3 ,,

There are still considerable variations in mortality in different wards of the City, as shown in the table below:—

Distribution of Death-Rates in Wards.

	Ward.	Death-rate 1926	
Central Wards	St. Paul's	14.6	Average 14.1
	St. Mary's	16.9	
	Duddeston and Nechells	12.8	
	St. Bartholomew's	14.0	
	St. Martin's and Deritend	14.6	
	Market Hall	13.2	
	Ladywood	12.3	
Middle Ring	Lozells	12.7	Average 10.9
	Aston	12.3	
	Washwood Heath	9.3	
	Saltley	7.3	
	Small Heath	9.0	
	Sparkbrook	10.9	
	Balsall Heath	12.0	
	Edgbaston	11.9	
	Rotton Park	11.3	
	All Saints'	12.1	
Outer Ring	Soho	10.9	Average 9.2
	Sandwell	9.8	
	Handsworth	9.6	
	Erdington North	8.1	
	Erdington South	9.3	
	Yardley	7.3	
	Acocks Green	8.6	
	Sparkhill	9.2	
	Moseley and Kings Heath	9.8	
	Selly Oak	8.2	
	Kings Norton	8.6	
	Northfield	10.0	
	Harborne	10.3	

St. Mary's ward with a death-rate of 16.9 per 1,000 is the district with the worst death-rate. It has held this unenviable position with very few exceptions for three decades. Yet it is true to say that more attention has been continuously given to the sanitary conditions of this ward than any other. In addition, it is true to say that this ward generally has the highest birth-rate and infant mortality rate of any of our wards.

Groups of Wards.

It will be noticed from the table that the Central Wards had a death rate of 14.1, the middle ring of wards one of 10.9, and the outer ring of wards one of 9.2 per 1,000 living in these areas. There has been a closer approximation of the death-rate in the Central Wards to that of the Outer Wards in recent years. In bygone days it used to be 50 per cent. higher. Last year it was only 35 per cent. higher.

MORTALITY AT DIFFERENT AGE PERIODS.

The mortality at different age periods during 1926 was as follows:—

	Approximate Population.	Deaths.	Approximate Death-rate per 1,000	Per centage of Total Deaths.
Under 1 year	17,020	1,301	76.4	12.0
1 and under 2	16,310	322	19.7	3.0
2 ,, 3	16,480	107	6.5	1.0
3 ,, 4	17,060	77	4.5	0.7
4 ,, 5	17,560	64	3.6	0.6
5 ,, 10	92,870	215	2.3	2.0
10 ,, 15	94,160	137	1.5	1.2
15 ,, 20	89,890	222	2.5	2.0
20 ,, 25	84,480	251	3.0	2.3
25 ,, 35	151,910	561	3.7	5.2
35 ,, 45	139,680	823	5.9	7.6
45 ,, 55	111,420	1,210	10.9	11.2
55 ,, 65	65,960	1,602	24.3	14.8
65 ,, 75	34,340	2,031	59.1	18.7
75 and upwards	12,080	1,924	159.3	17.7

From the above table it will be seen that nearly one half of the deaths take place at ages under 55 years and that nearly one quarter occur between the ages of 25 and 55, that is during an individual's most productive period of life.

The next table shows the main causes of mortality among adults of various ages.

DEATHS FROM CERTAIN CAUSES AT AGE PERIODS.

Deaths from	20-24	25-34	35-44	45-54	55-64	65-74	75-
Influenza	8	26	40	40	50	46	34
Pulmonary Tuberculosis	**103**	**198**	**209**	174	83	23	5
Cancer	4	26	79	**222**	351	338	176
Diseases of Nervous System	10	30	58	103	173	278	228
Diseases of Heart and Circulation	16	55	103	167	**410**	**603**	**618**
Respiratory diseases	12	58	116	185	208	336	329
Diseases of Digestive System	15	24	53	87	106	81	54
Urinary System	10	30	39	63	72	100	50
Puerperal Diseases	11	38	19	2	—	—	—
Violence	25	34	48	61	40	44	57

It will be noted

(1) That pulmonary tuberculosis is the greatest cause of death between 20 and 45 years of age.

There were 510 deaths from this cause and at this age period last year.

(2) At ages over 45 heart disease is markedly the chief cause.

(3) Cancer plays a large part in mortality between 45 and 85.

The principal causes of death at all ages during 1926 were as follows:—

PRINCIPAL CAUSES OF DEATH, 1926.

	Number of deaths.	Proportion per 1,000 deaths from all causes.
Measles	78	7
Whooping Cough	128	12
Diphtheria	116	11
Influenza	260	24
Tuberculosis (all forms)	1024	94
(Tuberculosis of respiratory system)	(905)	(83)
(Other forms of Tuberculosis)	(119)	(11)
Cancer—Malignant Disease	1205	111
Diseases of nervous system and sense organs	988	91
Total diseases of heart and circulation	2031	187
(Diseases of Heart)	(1636)	(151)
(Other diseases of circulatory system)	(395)	(36)

	Number of deaths.	Proportion per 1,000 deaths from all causes.
Total diseases of respiratory system	1799	166
(Bronchitis)	(764)	(70)
(Pneumonia—all forms)	(928)	(86)
(Other diseases of respiratory system)	(107)	(10)
Total diseases of digestive system	698	64
(Diarrhœa and enteritis)	(244)	(22)
(Other diseases of digestive system)	(454)	(42)
Non-venereal diseases of genito-urinary system ...	386	36
Premature birth and diseases of early infancy ...	594	55
Old age	398	37
Violence (all forms)	426	39
Other causes	716	66
Total deaths	10,847	1,000

From the above figures it will be seen that the principal killing diseases were:—

Tuberculosis, 1,024 deaths (see page 76).

Cancer, 1,205 deaths (see page 15).

Heart Disease, etc., 2,031 deaths (see page 19).

Respiratory Diseases, 1,799 deaths (see page 20).

Causes of Sickness and Invalidity.

It is unfortunate that except in the case of notifiable disease statistics showing the amount of sickness in the City are not available.

In his report for the year 1925, Sir George Newman, the Chief Medical Officer of the Ministry of Health, gives figures relating to the amount of sickness and disability among persons insured under the National Insurance Act, 1911. More than 13 million people in England and Wales are so insured and in 1925 they suffered over 25 million weeks' sickness, that is an average of about two weeks each, and equal in the aggregate to a year's work for half a million persons lost through invalidity.

If Birmingham people suffered in the same degree as the country as a whole it would mean that the insured workers in this City lost approximately 600,000 weeks' work through sickness.

The diseases which caused the greatest amount of invalidity are by no means the same as those which figure most prominently in the mortality statistics. Taking 1,000 as representing the total amount of sickness the relative amounts due to particular diseases were as follows:—

	Persons.	Males.	Females.
Influenza	130.5	137.7	115.9
Tuberculosis, all forms	11.3	10.9	12.0
Organic heart disease	13.5	14.0	12.5
Anæmia	21.0	1.9	59.8
Bronchitis, bronchial and nasal catarrh, cold, etc.	194.8	201.1	181.9
Pneumonia and other diseases of the respiratory system ...	17.1	19.5	12.0
Diseases of the digestive system	118.7	115.9	124.5
Diseases of the genito-urinary system	25.3	15.7	45.1
Diseases of the nervous system and special senses ...	45.4	42.9	50.3
Skin Diseases	36.7	33.3	43.6
Injuries and Accidents	104.9	134.8	43.9
Abscess, boils and other septic conditions	76.0	79.3	69.3
Lumbago, rheumatism, etc.	93.4	103.0	74.0
Debility, neuralgia and headache	49.7	36.1	77.5
Malignant Disease	1.9	2.1	1.6
Other Diseases	59.8	51.8	76.1
Totals	1000.0	1000.0	1000.0

It is found that the greatest amount of sickness occurs in February and March, and in view of this a leaflet was recently drawn up in the following terms and has been widely distributed by the infant visitors in the course of their work:—

CITY OF BIRMINGHAM.

The Value of Sunlight and Open Air.

Recently a statement has been made that the year 1926 was one of the most sunless years on record in the Midlands.

In England the winter sun is always low in the horizon, and its light, therefore, has to pass through a greater distance of moist atmosphere than in summer. This greatly reduces its power. In addition the days are short, so that the duration and power of sunlight is much reduced.

In winter, too, on account of inclement weather most people spend a larger part of their time indoors than they do in summer.

These two factors have a powerful effect for harm on the health of children and young persons.

One has only to notice the large number of pallid faces now, compared with the rosy cheeks of the children in summer to recognise that a profound change has occurred.

The largest amount of illness occurs with great regularity in February and March, that is at the end of our dullest and most sunless period. This great increase of illness is due largely to the lowering of vitality which results from the reduction in the amount of sunlight and the shorter hours spent in the open air in winter. All doctors are busiest in these two months, and they report that the ailments are general rather than of any one character. Babies and young children are most easily affected, but young adults suffer too.

The remedy is a simple one, but difficult in some cases to carry out.

More instead of less time needs to be spent in the open air during the day in winter than in summer. Every opportunity must, therefore, be taken in winter time to be out in the open air during the day. It is a mistake to keep babies and young children indoors except in wet weather. Cold is not harmful if clothing is sufficient and if children are exercised.

A great deal of illness can be prevented if everybody will brave the cold and get into the open air and see that those he has charge of do this also.

Public Health Department,
The Council House,
January, 1927.

INFANT MORTALITY.

(See page 95).

CANCER.

There were 1,205 deaths from cancer in Birmingham in 1926, as compared with 1,204 in 1925 and 1,251 in 1924.

The recorded death-rate from cancer has been as follows:—

Death-Rate per 1,000 from Cancer.

1901-1905	.74
1906-1910	.84
1911-1915	.94
1916-1920	1.03
1921-1925	1.21
1916	1.00
1917	1.02
1918	1.02
1919	1.01
1920	1.12
1921	1.12
1922	1.18
1923	1.17
1924	1.30
1925	1.27
1926	1.26

The mortality from cancer was distributed over various age periods as shown below:—

Cancer Mortality at Various Ages.

	Deaths, 1926.	Death-rate per 1,000.
Under 25 years	13	.03
25—34 years	26	.17
35—44 years	79	.57
45—54 years	222	1.99
55—64 years	351	5.32
65—74 years	338	9.84
75 years and over	176	14.57

The distribution of the deaths over the different parts of the City was as follows :—

CANCER DEATH-RATES IN WARDS.

	Ward.	Death-rate 1926.	
Central Wards	St. Paul's	1.11	Average 1.15
	St. Mary's	1.01	
	Duddeston and Nechells	1.10	
	St. Bartholomew's	1.13	
	St. Martin's and Deritend	1.40	
	Market Hall	1.09	
	Ladywood	1.19	
Middle Ring	Lozells	1.50	Average 1.32
	Aston	1.26	
	Washwood Heath	0.93	
	Saltley	0.64	
	Small Heath	0.92	
	Sparkbrook	1.59	
	Balsall Heath	1.46	
	Edgbaston	1.58	
	Rotton Park	1.57	
	All Saints	1.77	
Outer Ring	Soho	1.28	Average 1.17
	Sandwell	0.81	
	Handsworth	1.27	
	Erdington North	0.92	
	Erdington South	1.29	
	Yardley	1.08	
	Acocks Green	0.85	
	Sparkhill	1.43	
	Moseley and Kings Heath	1.40	
	Selly Oak	1.34	
	Kings Norton	1.03	
	Northfield	1.12	
	Harborne	1.38	

It will be noted that the mortality rate from cancer is fairly equally distributed over the City. There has been a slight tendency for a higher rate to be observed in the middle ring of wards, but the difference may be only accidental. It will be noted that the highest rate was 1.77 per 1,000 in All Saints Ward. Again three of the wards with the highest rates adjoin each other, All Saints, Rotton Park and Edgbaston.

The large table on page 17 shows approximately the primary site at which cancer started in the cases which proved fatal in 1926.

It will be noted these are as follows :—

1.	Lips, tongue, palate or jaw	68	
2.	Pharynx, œsophagus, stomach, liver	337	
3.	Peritoneum, intestine, rectum	272	
			677
4.	Female organs of reproduction	127	
5.	Breast	127	
			254
6.	Skin		16
7.	Other organs		258
			1205

This classification is adopted because it is convenient thus to group the certificates of death. It is by no means based on any scientific principle.

It shows markedly that in more than half the fatal cases of cancer the primary site was in the alimentary tract.

When, however, Groups 4 and 5 are based on the number of women in the population the incidence of these varieties is seen to be extremely high.

DEATHS FROM CANCER IN 1926.

Ages.	Lip, Tongue, Palate, Jaw.			Pharynx, Œsophagus, Stomach, Liver.			Peritoneum, Intestine, Rectum.			Female Organs of Reproduction.			Breast.			Skin.			Other Organs.			Total.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	1
1—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	1	1
5—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2	—	2	2
10—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	2	3	1	3	4
15—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	1
20—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	3	4	1	3	4
25—	1	—	1	3	3	6	1	2	3	—	6	6	—	2	2	1	—	1	4	3	7	10	16	26
35—	—	—	—	8	8	16	8	3	11	—	12	12	—	16	16	—	1	1	15	8	23	31	48	79
45—	12	4	16	28	22	50	19	12	31	—	35	35	—	41	41	1	1	2	29	18	47	89	133	222
55—	30	1	31	66	45	111	31	35	66	—	29	29	1	38	39	3	1	4	55	16	71	186	165	351
65—	10	1	11	66	37	103	58	48	106	—	29	29	—	18	18	1	4	5	50	16	66	185	153	338
75—	6	1	7	22	23	45	16	31	47	—	14	14	—	9	9	3	—	3	16	13	29	63	91	154
85—	1	—	1	—	6	6	1	7	8	—	2	2	—	2	2	—	—	—	3	—	3	5	17	22
All Ages	60	8	68	193	144	337	134	138	272	—	127	127	1	126	127	9	7	16	176	82	258	573	632	1205

In the Report for 1925 a chart was inserted which showed that there had been since 1901 a steady and fairly uniform increase in cancer deaths up to the year 1924. All that can be said since 1924 is that the number of deaths has not increased.

Cancer Investigation Work.

In every civilized country throughout the world research work is being carried out to find the cause of cancer and to discover a remedy or a means of prevention.

The British Cancer Campaign has linked up all the unofficial efforts in this country and has undertaken to issue a summary of results from all countries so that workers may be kept informed as to the results and methods used.

The Ministry of Health has a wide-spread organisation for obtaining accurate information as to certain features of cancer.

In Birmingham a Branch of the British Cancer Campaign has been established with Sir Gilbert Barling, Bart., as its Chairman. Funds have been collected and certain lines of research decided on and commenced.

Results of Cancer Investigation.

(1) Here in Birmingham, as in many other cities, the most outstanding conclusion is that in the case of early cancer in accessible situations such as the breast or the cervix the best results are obtained by removal under competent hands. In a large number of the cases a complete cure is obtained.

(2) Very definite evidence exists that people who recognise they have some obvious lump do not apply for help until the cancer has spread widely.

(3) Some evidence appears to accumulate that in cases of inoperable cancer, good may be done by the administration of certain chemical substances.

A copy of a leaflet on cancer of the breast was recently delivered to nearly every house in Birmingham. This is the second occasion on which such information has been broadcast. The leaflet was as follows :—

BRITISH EMPIRE CANCER CAMPAIGN AND PUBLIC HEALTH DEPARTMENT, BIRMINGHAM.
CANCER OF THE BREAST.

It is desired that the information given below be made widely known among adult women in Birmingham.

If it be acted upon a great many women will be saved from a painful death from Cancer.

Recently in Birmingham and in other towns an inquiry has been made into what can be done for women who have cancer of the breast.

Everywhere the results of early operation by a competent surgeon are found to be very good. In every 100 who apply early about 80 are restored to health and are well at least 10 years after the operation.

Without early operation cancer of the breast spreads quickly and causes death in a few years.

It has been found that few women apply for treatment early—most of them wait until it is too late. About three out of every four cases with cancer of the breast come to the doctor too late.

For the sake of the women of Birmingham we ask that any woman who finds that she has a lump or hardness, with or without pain, in the breast should not lose a day in applying to her family doctor or to a hospital for advice.

Very often the lump will be found not to be cancer, and anxiety will be relieved. Where the lump is found to be cancerous it must be removed without delay.

A. H. James, C.B.E., J.P.,
Lord Mayor of Birmingham.

Gilbert Barling, Bart., F.R.C.S.,
Chairman, Birmingham Branch, British Empire Cancer Campaign.

E. C. Keay,
Treasurer, Birmingham Branch, British Empire Cancer Campaign.

G. P. Mills, F.R.C.S.

Colin K. Langley,
Hon. Secs., Birmingham Branch, British Empire Cancer Campaign.

Harold Roberts,
Chairman, Public Health Committee, Birmingham.

John Robertson, M.D.,
Medical Officer of Health, Birmingham.

DISEASES OF THE HEART AND BLOOD VESSELS.

There were 2,031 deaths last year from diseases of the heart and blood vessels.

The ages at death and death-rate per thousand were as follows :—

	Deaths.	Death-rate per 1,000.
Under 25 years	75	.17
25—34 years	55	.36
35—44 years	103	.74
45—54 years	167	1.50
55—64 years	410	6.22
65—74 years	603	17.56
75 years and over	618	51.16
All ages	2,031	2.12

It will be noted that 810 of these deaths occurred in persons under 65 years of age.

The variety of disease in the 2,031 cases was as follows :—

1. All varieties of heart disease	1636
2. All varieties of diseases of blood vessels	395
(a) Pericarditis	8
(b) Infective Endocarditis	41
(c) Angina Pectoris	47
(d) Aortic Valve Disease	56
(e) Mitral Valve Disease	158
(f) Unspecified valvular disease	232
(g) Fatty Heart	24
(h) Undefined Heart Disease	1070
(i) Arterio sclerosis	330
(j) Aneurism	29
(k) Other Diseases of Blood Vessels	36

The bulk of the mortality is caused by heart disease and arterio sclerosis and was distributed over the City as indicated by the death-rates in the following table.

DEATH-RATES FROM HEART DISEASE AND ARTERIO SCLEROSIS IN WARDS.

	Ward.	Death-rate 1926.	
Central Wards ...	St. Paul's	2.53	Average 2.42
	St. Mary's	3.15	
	Duddeston and Nechells	1.67	
	St. Bartholomew's	2.55	
	St. Martin's and Deritend	2.43	
	Market Hall	2.60	
	Ladywood	1.98	
Middle Ring ...	Lozells	2.77	Average 2.02
	Aston	2.15	
	Washwood Heath	1.53	
	Saltley	1.22	
	Small Heath	1.54	
	Sparkbrook	2.08	
	Balsall Heath	2.56	
	Edgbaston	2.13	
	Rotton Park	2.19	
	All Saints	2.07	

	Ward.	Death-rate 1926.	
Outer Ring	Soho	1.75	Average 1.71
	Sandwell	1.87	
	Handsworth	1.99	
	Erdington North	1.49	
	Erdington South	1.90	
	Yardley	1.22	
	Acocks Green	1.59	
	Sparkhill	1.38	
	Moseley and Kings Heath	2.35	
	Selly Oak	1.44	
	Kings Norton	1.86	
	Northfield	1.40	
	Harborne	1.95	

There can be but little doubt that much of this group of diseases might be prevented, at least so far as those deaths are concerned which occur under 65 years of age. Probably the most essential advance is to be made along the lines of better health education.

Infections from tonsils and adenoids in children, exposure to cold and damp, specific poisons, foolish attempts to strain the body when not in proper training, unhygienic methods of life such as living on unsuitable and excessive amounts of food—all these things play their part in certain of the cases and all are easily avoided by knowledge properly applied by the adult and through him to his children.

BRONCHITIS, PNEUMONIA AND OTHER RESPIRATORY DISEASES.

The mortality from these diseases in Birmingham, and England and Wales is shown in the next table.

	Birmingham.	England & Wales.
1901-1905	3.19	2.77
1906-1910	2.82	2.54
1911-1915	2.64	2.44
1916-1920	2.54	2.55
1921-1925	2.10	2.05
1917	2.10	2.55
1918	2.85	3.02
1919	2.67	2.53
1920	2.46	2.17
1921	2.02	1.96
1922	2.38	2.31
1923	1.98	1.87
1924	2.15	2.13
1925	1.97	2.00
1926	1.88	?

The reduction shown in the above table between the first and last quinquennium is—

Birmingham	34 per cent.
England and Wales	26 per cent.

It will be noted that in 1925 and one or two other recent years, the rate for the City was below that for the whole country.

The distribution of the deaths from Respiratory Diseases over the wards of the City was as follows :—

DEATH-RATE PER 1,000 FROM RESPIRATORY DISEASES.

	Ward.	Death-rate 1926.	
Central Wards	St. Paul's	2.62	Average 2.79
	St. Mary's	4.04	
	Duddeston and Nechells	2.98	
	St. Bartholomew's	2.50	
	St. Martin's and Deritend	2.85	
	Market Hall	2.60	
	Ladywood	1.92	
Middle Ring	Lozells	1.74	Average 1.78
	Aston	2.42	
	Washwood Heath	1.41	
	Saltley	1.17	
	Small Heath	1.27	
	Sparkbrook	1.35	
	Balsall Heath	2.32	
	Edgbaston	1.91	
	Rotton Park	2.16	
	All Saints'	2.03	
Outer Ring	Soho	1.89	Average 1.21
	Sandwell	1.73	
	Handsworth	1.31	
	Erdington North	1.12	
	Erdington South	0.86	
	Yardley	1.03	
	Acock's Green	0.96	
	Sparkhill	1.02	
	Moseley and King's Heath	1.10	
	Selly Oak	1.01	
	King's Norton	1.35	
	Northfield	1.03	
	Harborne	1.32	

The mortality from respiratory diseases at ages is shown below.

	Deaths.	Death-Rate per 1,000.
Under 1 year	301	17.69
1 year	124	7.60
2 years	46	2.79
3 years	20	1.17
4 years	10	0.57
5—24 years	66	0.18
25—34 years	58	0.38
35—44 years	116	0.83
45—54 years	185	1.66
55—64 years	208	3.15
65—74 years	336	9.80
75 and over	329	27.24

Cases of acute Primary and acute Influenzal Pneumonia are reported to the Public Health Department and a visit is paid to the home by a Health Visitor (see page 23).

DEATHS IN INSTITUTIONS.

Of the 10,847 deaths in 1926, 4,462 occurred in institutions, viz. :—

2,776 in Poor Law Institutions.
307 in publicly provided Fever Hospitals.
258 in publicly provided Sanatoria.
925 in other Hospitals charitably supported.
159 in Private Nursing Homes.
37 in Homes.

II. GENERAL HEALTH SERVICES.

HOSPITAL PROVISION.

The following is a list of Birmingham Hospitals (other than private hospitals) and the accommodation provided by them. Those marked (c) are supported wholly by the City Council, those marked (p) partly so.

	No. of beds.
A.1.—FEVER.	
City Hospital, Little Bromwich (c)	466
City Hospital, Lodge Road (c)	253
2.—SMALLPOX.	
Witton Smallpox Hospital (c)	24
B.1.—TUBERCULOSIS.	
Yardley Road Sanatorium (c)	325
West Heath Sanatorium (c)	115
Salterley Grange Sanatorium, Cheltenham (c)	68
Romsley Hill Sanatorium, Halesowen (p)	120
Woodlands and Forelands (Cripples' Union) (p)	177*

(Also a few beds in general hospitals towards the maintenance of which the City Council makes a grant).

*About 100 of these are generally in use for Tuberculosis cases.

2.—MATERNITY.	
Maternity Hospital (p)	65
Heathfield Road Maternity Home (c)	18

(Also a number of beds (about 75) in the Poor Law Hospitals. The City Council makes a grant for certain of these).

3.—CHILDREN.	
The Children's Hospital (p)	138
Witton Babies' Hospital (c)	25
Carnegie Institute (c)	9

(Also certain beds (about 250) in the Poor Law Hospitals).

4.—OTHER.	
(a) *General Hospitals*—	
The General Hospital	370
Jaffray Hospital	56
Homœopathic Hospital	50
Queen's Hospital	224
Dudley Road (Poor Law)	926
Selly Oak (Poor Law)	450
(b) *Special Hospitals* (exclusive of mental hospitals).	
Women's Hospital (p) and Taylor Memorial Home	135
Eye Hospital (p)	120
Ear and Throat Hospital	51
Orthopædic Hospital	80
Skin and Urinary Hospital	22
Nerve Hospital	37

AMBULANCE FACILITIES.

There is a good and efficient motor ambulance service for all purposes in the City.

A.	For acute infectious diseases the Public Health Department have	4 ambulances.
	For Tuberculosis the Public Health Department have	2 ambulances.
B.	For accidents the City Police have	7 ambulances.
	For cases of illness requiring removal to or from hospital or otherwise, the British Red Cross Society at the cost of the patient, or of the Corporation, have	4 ambulances.

In addition there are several ambulances attached to hospitals or factories.

CLINICS AND TREATMENT CENTRES.

Maternity and Child Welfare Centres (see page 99)	25
Day nurseries	0
School Clinics (see Report of School Medical Officer)	8
Tuberculosis dispensaries (see page 82)	1
Venereal Diseases, Treatment Centres (see page 91)	3

PUBLIC HEALTH OFFICERS OF THE CITY COUNCIL.

Medical Officer of Health ...	1
Assistant Medical Officers of Health ...	3
Maternity and Child Welfare Medical Officers (whole time) ...	5
Maternity and Child Welfare Medical Officers (part time) ...	21
Hospital and Sanatorium Medical Officers ...	16
Hospital and Sanatorium Nurses ...	278
Ward Maids ...	206
City Bacteriologist ...	1
Assistant City Bacteriologist ...	1
City Analyst ...	1
Assistant Analysts ...	3
Infant Welfare Visitors ...	74
Tuberculosis Visitors ...	11
General Health Visitors ...	19
Sanitary Inspectors ...	49
Clerks ...	65
Other Officers and Workmen ...	240
Total	994

PROFESSIONAL NURSING IN THE HOME.

The supply of nurses for general purposes is provided by thirteen district nursing associations. These cover the whole area of Birmingham with the exception of a few outlying sparsely populated areas. These associations provide district nurses and also undertake to nurse any cases of measles, whooping cough or pneumonia which are referred to them by the Public Health Department at a uniform charge of 10/- per case. In any cases of the above diseases coming in the first place to the knowledge of the District Nursing Association a similar fee is paid provided the name and address of the patient is sent to the Public Health Department forthwith. (For better class cases the nurses are obtained from one of the many nursing organisations in the City).

HEALTH VISITORS' WORK.

(Report by Miss Blanche Gardiner, B.A., Superintendent of Health Visitors).

The total number of Health Visitors (General. Tuberculosis, and Infant Welfare) varied somewhat during the year.

That of the General Health Visitors remained constant (19), the post being filled, of one, who left to be married.

Of the 12 Tuberculosis Visitors, one who resigned was not replaced; and Miss Dunn, who had superintended them for 9 years, also sent in her resignation, after 15 years' service.

Amongst the Infant-Welfare Visitors, there were more frequent changes; and their number increased with the opening of 3 new Centres.

The following table gives some indication of the class and variety of cases, investigated by the general Health Visitors, and also shews the numbers visited by them, during the past and the two preceding years:—

Primary Visits:—	1924.	1925.	1926.
House Inspection ...	2,868	1,759	2,130
Infant Visits (including Stillbirths) ...	1,773	1,532	1,697
Measles ...	5,168	10,087	6,222
German Measles ...	102	2,410	1,470
Chicken Pox ...	3,817	4,975	5,965
Whooping Cough ...	3,468	4,320	3,677
Mumps ...	1,754	5,789	5,569
Influenza ...	389	429	292
Pneumonia ...	2,522	2,309	2,683
Epidemic Diarrhœa ...	8	8	1
Scabies ...	106	72	87

	1924.	1925.	1926.
PRIMARY VISITS :—			
Impetigo	641	606	638
Conjunctivitis	62	43	38
Enlarged Glands	654	1,064	1,092
Bronchitis, Colds, etc.	2,660	3,357	2,996
Neglect, Insufficient Clothing, etc. ...	85	75	77
Verminous Cases	98	70	64
Visits to Schools	285	258	227
Visits to obtain addresses	407	690	807
Visits to Officials, Doctors, etc.	540	345	254
Visits to aged persons or on their behalf	145	130	201
Visits for special enquiries	842	734	996
Country Holiday Inspections	46	18	4
Health Talks	9	6	4
Other Visits	636	518	381
Total Primary Visits	29,085	41,604	37,572
RE-VISITS	24,028	18,965	20,359
TOTAL EFFECTIVE VISITS	53,113	60,569	57,931
USELESS VISITS (Out, Removed, etc.)	4,449	5,564	4,978
GRAND TOTAL	57,562	66,133	62,909

SCABIES.

The incidence of scabies is very small now compared with that, during and soon after, the War; but there was a slight increase this year, 87 cases being reported and visited, as against 72 last year. 32 tickets for free medicinal baths at the Skin Hospital, were given to certain Scabies patients, in need of them.

PNEUMONIA.

The notifications of Pneumonia were rather more numerous, the Doctors having notified approximately 2,437 cases (as compared with 2,185 in 1925); and the Health Visitors paid 2,683 primary visits, and 3,797 re-visits to these, and to additional cases of Pneumonia, reported by the District Nursing Societies, etc.

Every one realises what an important adjunct good nursing is, in the treatment of Pneumonia, and the District Nurses are generally welcomed by both Doctor and patient. It is, however, regrettable, when the case is not notified, until after death, and a Nurse has not been called in.

THE BIRMINGHAM DISTRICT NURSING SOCIETIES

Again did most useful work in nursing 938 cases of Pneumonia, severe Measles and Whooping Cough, in accordance with an agreement made with the Public Health Department.

BIRTHS.

With the increase in the number of Maternity and Infant Welfare Centres, there are proportionately somewhat fewer Infants for the general Health Visitors to visit; but these remaining ones are generally living in the most out-lying parts of the districts, and consequently much time and walking is involved.

This year they paid 1,697 primary visits, and 7,899 re-visits to Infants (including 41 visits, and 13 re-visits, in connection with still-births).

INFECTIOUS DISEASES.

In connecton with Measles, German Measles, Whooping Cough, Chicken Pox and Mumps, 22,903 primary visits, and 3,714 re-visits were paid, in order to fill in the necessary forms for the schools, for the exclusion of the patient, and certain of the contacts.

Though the Health Visitors do not investigate actual cases of Diphtheria, Scarlet Fever, Enteric Fever, etc., yet when there is an outbreak of any of these diseases, they are asked to make special note of any suspects, and also sometimes to keep in touch with the contacts.

Visits in connection with these last-mentioned illnesses are included either in the 381 "Other visits" (and 278 re-visits), or else in :—

SPECIAL ENQUIRIES.

The 996 "Special Enquiries" visits, besides embracing the above, also include some investigations re Cancer, Rheumatism of children, Jaundice, and also occasional visits to cases of Infantile Paralysis, and Sleepy Sickness.

A full enquiry was made in connection with the Cancer campaign, as to the subsequent history of patients operated on in the various Birmingham hospitals for Cancer of the Breast, Colotomy, etc.

THE AGED.

Each year, with unvarying regularity, one needs to mention the ever-recurring problem of the lonely, poor aged men and women.

So much do the Health Visitors appreciate the difficulties of dealing with these, that when the Royal Sanitary Institute held their Congress in Birmingham in 1921, a paper was compiled by them entitled,

" The lonely, incapacitated aged poor," and it is gratifying to note that amongst the subjects on which discussions are being arranged for the 1927 Congress, " The care of the Aged Poor " is again placed.

In Birmingham, 201 primary visits were paid as compared with 130 of last year.

The Blind.

Both old and young, in addition to being cared for, and visited by the Birmingham Royal Institute for the Blind, are also sometimes incidentally seen and reported on by the Health Department Visitors when entering the homes in connection with Infants, Pneumonia, Tuberculosis, and other Infectious Diseases.

The supplying of wireless sets at the end of the year to the blind of all ages has been a very great boon, the older people who could not work gaining perhaps the maximum benefit.

The Staff of Visitors.

The general Health Visitors and the Tuberculosis Visitors (with whom I have had, during the last quarter of the year, more intimate dealings), have as before, worked with energy and enthusiasm, responding most willingly to every emergency.

Particularly was this noticeable during epidemics, and also during the general strike in May, when in spite of very lengthy walks to and from the Council House, in addition to the long distances covered during their day's work, they all still cheerfully " carried on."

Their efforts in difficult, and often saddened circumstances during not a few, but many long years, are certainly worthy of every consideration.

MIDWIVES.

(See page 112).

CHEMICAL WORK.

Full details of the chemical work done during the year are given in the report of the City Analyst, which is published separately.

LEGISLATION IN FORCE.

The following is a list of special Acts and Bye-laws relating to the Public Health in force in Birmingham :—

General Adoptive Acts.

Public Health Amendment Act, 1890 (Part III. adopted).
Public Health Acts Amendment Act, 1907, Secs. 36, 44, 46, 51, 53, 55, 58, 62, 65.
Infectious Disease Prevention Act, 1890.
Public Health Act, 1925, Secs. 13-15, 17-19, 21-28, 30, 31, 35, 37, 39, 41-51, 53-55.

Local Acts.

The Birmingham Corporation (Consolidation) Act, 1883.
The Birmingham Corporation Acts, 1903, 1914, 1919 and 1922.

Bye-Laws.

Lime Kilns, 1864.
Common Lodging Houses, 1909.
Nuisances, 1909.
Tents, Vans, Sheds used for human habitation, 1909.
Rag, Bone and Skin Merchants, 1909.
Public Slaughter Houses, 1909.
Private Slaughter Houses, 1909.
Private Slaughter Houses, 1910 (Sunday Slaughter).
Knacker's Yards, 1909.
Good Rule and Government, 1914 (Offensive Offal through Streets, Bye-law No. 8).
Underground Rooms, 1915.
Houses let in Lodgings, 1922.

III. SANITARY CIRCUMSTANCES.

WATER SUPPLY.

The following tables show the chemical and bacteriological results of the samples of water collected from each of the three levels of supply.

Chemical Analyses of Birmingham Waters made by J. F. Liverseege, F.I.C. (City Analyst).

(Parts per 100,000).

1926		Total Solid Matter	Free Ammonia	Albuminoid of organic Ammonia	Nitrogen in Nitrates	Oxygen consumed in 3 hours at 27° C. (80° F.)	Chlorine in Chlorides	Hardness as CaCO	Plumbo solvency	Erosion one day
Jan.	H.	5.0	.000	.002	0	.28	0.8	1.9	—	1.7
,,	M.	4.8	.000	.002	0	.28	0.8	1.8	0.8	0.5
,,	L.	4.6	.001	.002	0	.27	0.8	1.8	—	3.0
Feb.	H.	5.4	.000	.001	0	.13	0.9	1.9	—	0.4
,,	M.	5.4	.000	.003	0	.19	0.9	1.8	0.6	0.5
,,	L.	31.0	.000	.004	.29	.06	2.2	22.0	0.3	0.1
Mar.	H.	5.4	.000	.002	0	.12	0.9	2.1	—	0.2
,,	M.	5.0	.000	.002	0	.12	0.8	2.0	0.8	0.7
,,	L.	14.6	.000	.002	.08	.09	1.6	6.8	1.0	0
April	H.	4.8	.000	.002	0	.14	0.8	2.0	—	0.1
,,	M.	4.8	.000	.002	0	.12	0.8	2.2	0.8	0.2
,,	L.	5.0	.000	.002	0	.12	0.8	2.0	0.8	0.2
May	H.	5.2	.000	.002	0	.10	0.9	2.5	—	0.3
,,	M.	46.8	.000	.002	.87	.01	3.4	29.0	0.9	0
,,	L.	31.2	.000	.004	.28	.05	2.1	22.5	0.2	0
June	H.	4.8	.000	.001	0	.07	0.9	2.0	—	0.1
,,	M.	4.2	.000	.001	0	.09	0.9	2.2	0.8	0.4
,,	L.	4.8	.000	.002	0	.10	0.9	2.0	0.7	0.2
July	H.	4.8	.000	.003	0	.08	0.9	1.8	—	0.3
,,	M.	41.2	.000	.002	.60	.02	3.5	23.0	1.0	0.1
,,	L.	26.8	.000	.002	.16	.04	2.2	20.0	0.2	0.1
Aug.	H.	23.6	.000	.001	.33	.00	1.5	16.0	—	0.1
,,	M.	4.6	.000	.003	0	.09	0.8	1.7	—	0.7
,,	L.	4.2	.000	.003	0	.09	0.8	1.7	—	0.8
Sept.	H.	5.0	.000	.004	0	.12	0.7	2.2	—	0.4
,,	M.	6.2	.000	.003	0	.17	0.8	3.0	0.8	0.2
,,	L.	32.8	.000	.003	.85	.02	2.7	17.5	1.2	0.1
Oct.	H.	5.0	.000	.002	0	.24	0.9	1.9		0.7
,,	M.	47.8	.000	.001	.73	.0	5.4	34.0		0.1
,,	L.	20.8	.000	.001	.44	.11	1.9	12.4		0.2
Nov.	H.	4.6	.000	.003	0	.25	0.8	2.2		0.3
,,	M.	4.8	.000	.003	0	.24	0.8	2.2		0.4
,,	L.	4.6	.000	.003	0	.26	0.8	2.2		0.4
Dec.	H.	5.4	.000	.003	0	.19	0.8	2.2		0.2
,,	M.	5.4	.000	.002	0	.19	0.8	2.2		0.2
,,	L.	25.0	.000	.001	.62	.07	2.1	2.4		0.1

H = High Level. M = Middle Level. L = Low Level.

Bacteriological Examination of Waters made by Dr. H. G. M. Henry (City Bacteriologist).

1926.		Number of micro-organisms obtained from 1 c.c. of water. On ordinary gelatine 7 days incubation.	B. Coli or aerogenes.
Jan.	H.	16	Absent in 100 cc
,,	M.	32	,,
,,	L.	36	,,
Feb.	H.	28	,,
,,	M.	96	,,
,,	L.	75	,,
Mar.	H.	36	,,
,,	M.	29	,,
,,	L.	115	,,
April	H.	46	,,
,,	M.	43	,,
,,	L.	26	,,
May	H.	41	,,
,,	M.	57	,,
,,	L.	107	,,
June	H.	40	Present in 50 c.c.
,,	M.	36	Absent in 100 c.c.
,,	L.	90	,,
July	H.	19	,,
,,	M.	23	,,
,,	L.	120	,,
Aug.	H.	293	,,
,,	M.	96	,,
,,	L.	60	,,
Sept.	H.	30	,,
,,	M.	30	,,
,,	L.	137	,,
Oct.	H.	60	,,
,,	M.	15	,,
,,	L.	110	,,
Nov.	H.	19	,,
,,	M.	25	,,
,,	L.	7	,,
Dec.	H.	45	,,
,,	M.	8	,,
,,	L.	221	Acidi lactici present in 50 c.c.

No outstanding extension of the water supply was carried out during the year, and no action was necessary in respect of any form of contamination.

RIVERS AND STREAMS.

(Statement by Mr. H. H. Humphries, M.Inst.C.E., City Engineer and Surveyor).

The Birmingham Corporation was instrumental in obtaining the formation of a Joint Committee in March, 1922, to undertake the duties of preventing the pollution of the Upper River Tame.

During the period of its existence, this Committee has obtained the removal from the streams situated within the City of liquid trade refuse produced at four large factories by advising its connection with the sewer. By a re-arrangement of the processes in operation at two trade premises the discharge of any liquid refuse has been totally prevented, and at one factory the firm has undertaken extensive work of redrainage to enable them to discharge the whole of their trade liquids to works for treatment before its discharge to the stream. Pollution of the stream has been anticipated in one instance by the erection of new premises, and the responsible authority has complied with the request for efficient disposal works to be constructed so that they may be ready for being brought into operation when the processes are commenced.

The other streams in the City are constantly under supervision, and wherever a case of pollution is observed or reported, steps are at once taken to prevent a recurrence of this practice.

DRAINAGE AND SEWERAGE.

(Statement by Mr. H. H. Humphries, M.Inst.C.E., City Engineer and Surveyor).

The following are the important works which have been carried out during the year 1926:—

Acocks Green Southern Outfall Sewer.

These works consisted of a main valley sewer from the Birmingham Tame and Rea Drainage Board's Works at Acocks Green up to Shirley Road, where extensive building operations are now in progress.

Cock Lane Sewerage, Northfield.

Consisted of an extension of the present system from Quarry Lane, along Bristol Road up to and along Cock Lane, where a considerable number of recently completed houses are now connected to the new sewer.

Wheelers Lane, Barn Lane, Etc., Sewers.

These works formed an extension of the existing main valley sewer in Haunch Lane and are part of a main scheme under which a considerable area of Kings Heath is now drained to its natural valley. The sewer has now been laid in Barn Lane at a normal depth for draining new properties, instead of being 25-ft. deep as in the case of the old sewer.

Bristol Road South Sewerage.

The construction of a new main sewer in Bristol Road, forming an extension of the existing valley sewer at Longbridge.

Dad's Lane Farm Housing Estate Sewerage.

Subsidiary sewers for the purpose of draining the new Corporation housing estate.

Marlborough House and Richmond Road Housing Estates Sewerage.

New branch sewers connecting the drainage from this Estate to the Cole Valley main sewer.

Hockley Valley Sewerage.

A further section of the work of deepening the Hockley Brook between Alma Street and Hockley Hill was completed.

Forming part of the same scheme the existing Hockley Main Sewer has been reconstructed and enlarged for a distance of about one mile in its lower length, between Holborn Hill and Chester Street.

SCAVENGING.

(Report by Mr. James Jackson, M.I.C.S., Superintendent of the Salvage Department).

During the year the Salvage Department has made further substantial progress towards the completion of the schemes which have been approved by the City Council in pursuance of their policy of abolishing the practice of tipping crude House Refuse.

Tyseley Works.

In June, 1926, the Minister of Health (The Rt. Hon. Neville Chamberlain, P.C., M.P.), officially opened the new Refuse Utilisation Plant at Tyseley, this being the third large scheme to be completed in continuance of the above policy during the past three years.

The Tyseley Works, which serve a population of approximately 210,000 persons, has enabled the Department to close down five tips, and discontinue the tipping of 15,000 tons per annum of unscreened House Refuse, and in addition the obsolete destructor at Montgomery Street, Sparkhill, has been diverted into the new works at Tyseley.

Lifford Extensions.

In order to cope with the increasing tonnage of refuse, consequent upon the rapid development of the southern portion of the city, the Salvage Committee decided to immediately proceed with the extension and modernisation of the Lifford Works at a cost of £22,000. The work was put in hand in December, 1926, and when completed it is estimated that the plant will afford adequate facilities for dealing with the refuse in that district for a further twenty years.

Abolition of Tipping.

The following table shews the extent to which the Department has reduced the quantity of house refuse taken to tips during the past four years:—

Year ended, Mar. 31st.	Refuse treated at depots.	Refuse taken to tips.	*Total refuse dealt with	Percentage tons of refuse tipped.
1924	167,032 tons	83,624 tons	250,656 tons	34%
1925	181,493 ,,	54,688 ,,	236,181 ,,	23%
1926	197,245 ,,	42,037 ,,	239,282 ,,	18%
1927	198,752 ,,	26,543 ,,	225,295 ,,	12%

*Exclusive of Cesspool Contents.

The output of dry house refuse during the year ended March 1927, was 225.50 tons per thousand of population, which is the lowest yield recorded since 1918.

The installation of standard portable dustbins is proceeding at a satisfactory rate, and the following table shews the progress of the work to date:—

Table Shewing the Various Kinds of Receptacles for the Storage of Refuse in Use on the 31/3/1927.

Date	No. of Premises	No. of standard bins		No. of other bins	No. of tubs and other movable receptacles	No. of bin-sheds containing standard bins	No. of Dry Ashpits	No. of Pans	No. of Wet Pits	No. of Dumb wells
		Good	Bad							
Mar., 1927	218,421	177,540	473	990	738	79,298	4,555	420	255	215
Mar., 1926	211,000	161,584	2,519	1,926	3,538	70,913	12,286	422	256	219
Mar., 1925	204,509	142,910	4,211	2,591	5,669	61,822	20,213	429	347	196
Mar., 1924	200,677	112,111	11,733	2,780	10,655	41,775	36,613	394	351	183

	March, 1927.	March, 1926.	March, 1925.	March, 1924.
Good standard bins	96.19%	88.73%	81.23%	64.35%
Bad standard bins	.26%	1.38%	2.39%	6.73%
Other bins	.54%	1.06%	1.47%	1.59%
Various kinds of portable receptacles (other than ashbins)	.40%	1.94%	3.22%	6.12%
Ashpits—Wet and Dry	2.61%	6.89%	11.69%	21.21%
	100%	100%	100%	100%

SANITARY INSPECTION.

The table below shows the number of visits paid by the general Sanitary Inspectors, and the number of defects found for which notices were served.

	Number of visits paid by inspectors.	Number of defects for which notices were served.
1922	134,516	86,938
1923	143,866	104,210
1924	148,199	123,573
1925	124,024	104,735
1926	124,265	108,601

The next table gives fuller details of the character of the work done.

No. of visits and revisits paid :—

General House Inspection	7,830
Infectious Diseases	8,513
Nuisances or Complaints	28,653
Work ordered	45,022
Work in progress	17,257
Inspection of Dirty Courts	1,650
Manure Receptacles	495
Smoke or Water Tests	755
Tents, Vans and Sheds	246
Offensive Trades	72
Ice Cream Vendors	2,036
Rats Order	857
Calls on Owners or Agents	4,822
Other Purposes	6,057
Total	124,265

Houses to be disinfected after Scarlet Fever	1,501
,, ,, ,, Diphtheria	1,941
,, ,, ,, Typhoid Fever	33
,, ,, ,, Other Diseases	14
Repairs to Houses	71,403
Houses to be cleansed	5,535
Houses to be provided with better ventilation	37
Houses to be provided with separate water supply	803
Cases of overcrowding to be remedied	32
Houses to be provided with Damp Courses	211
Water to be removed from Cellars	413
Spouting to be repaired or disconnected	5,068
Rain Water Cisterns to be disconnected or abolished	111
Ashpit Privies to be converted to Water Closets	15
Pan Privies to be converted to Water Closets	38
Privies and Closets to be limewashed	731
Water Closets to be repaired or reconstructed	3,883
Additional Water Closets to be provided	575
Ashplaces to be repaired or limewashed	83
Soilpipes to be repaired or removed	61
Urinals to be put in order or closed	41
Drains to be relaid or repaired	1,509
Drains to be opened and cleansed	6,639

Gully Traps to be provided	300
Interception Traps to be provided on main drains	41
Premises to be supplied with additional drains	185
Drains in cellars to be disconnected or abolished	19
Sink Bend Pipes to be repaired or affixed	1,151
Sanitary Sinks to be provided	456
Yards to be paved	107
Yards to be repaired	894
Courts or Yards to be cleansed by Tenants	46
Houses to be cleansed by Tenants	199
Wash Houses to be repaired or limewashed	2,030
Keeping of fowls to be discontinued	62
Nuisances from swine and swine styes abated	24
Accumulations of rubbish, manure, etc., to be removed	305
Manure receptacles to be provided or repaired	49
Dangerous premises to be reported to City Surveyor's Department	638
Defective Fittings to be reported to Water Department	1,191
Other Work to be done	227
Total	108,601

In connection with the defects discovered notices were issued as follows :—

Preliminary notices	14,690
Reminders	1,445
Statutory notices	3,910

In 185 cases a summons was issued. In 13 instances, covering 28 summonses, Magistrates' Orders to do the work were obtained. In the remaining 157 cases the work was done without an order.

COURTYARDS.

The two Inspectors who are appointed to visit courtyards and see that the closets and drain traps are in good working order, made 96,269 inspections of water closets. In 63,810 instances the closets were locked up, and in 32,459 they were open. In 160 instances the closet was dirty and in 161 defective.

Certain courtyards are cleansed periodically by the staff of Court Cleansers whose work during the year is set out in the following figures :—

Courts cleansed (paid)	11,796
Courts cleansed (free)	9,788
Houses stripped	24
Water closets inspected	100,117
Water closets opened	6,648
Water closets cleansed	63,762
Sheds washed	30,819
Drain traps cleansed	155,773
Drains opened	5,063

ATMOSPHERIC POLLUTION.

Two sets of observations have been made during a number of years :—

A. By two Smoke Inspectors as to the amount of black smoke emitted from factory and other chimneys.

B. By the City Analyst on the impurities found each month in the rainfall.

The latter is done for the Meteorological Office and is comparable with similar observations taken in a number of other towns.

In regard to smoke from factory chimneys, the inspector is required to make an observation for one hour and record the duration of smoke emitted. This is done to carry out the requirements of the Birmingham Corporation (Consolidation) Act of 1883. The following table shows the number of observations made and the number in which excessive emissions were made during each of the past four years.

	1926.	1925.	1924.	1923.
Total number of observations	4716	4869	4183	4930
Excessive Smoke—				
From Boiler Fires	104	97	80	93
From Boilers and Furnaces	17	18	24	27
From Metallurgical Furnaces	48	93	66	76
Total number of excessive emissions ...	169	208	170	196
Number of prosecutions	39	86	60	88
Convictions obtained	39	86	60	88
Total amount of fines	£86 10s.	£184	£130	£172
Average per case	£2/4/4	£2/2/9	£2/3/4	£1/19/1
Cautions given	124	120	78	93

During the year 1926 the Smoke Abatement Act of 1926 was passed by Parliament and will come into operation on May 1st, 1927. The Act very definitely extends the power of local authorities for dealing with factory smoke and it will enable the Court to apply a maximum penalty of £50 instead of £5 as hitherto. Already action is being taken to apply certain of the provisions of the Act at the earliest possible moment.

The observations on the dirt content of the air at three separate sites in the City are fully recorded in the Annual Report of the City Analyst. The report of the Meteorological Office on this work (which deals with the year ending March 11th, 1926, records that the Birmingham results were lower than the average of the preceding four years.

These observations are important from two points of view. They demonstrate that much has been and still can be done to reduce factory smoke; they also call attention to the damage done in a large city by the shutting out of sunlight by particles in the air.

THE GRIT NUISANCE.

It has become a custom in many works to raise steam by using inferior fuels and a forced draught. The object has been accomplished, but at the expense of the most intolerable nuisance to people who live in the neighbourhood. Grit catchers have been applied with only partial success. The nuisance is so serious that unless a remedy is obtained in the direction of catching all grit, action must be taken to prevent the use of this method.

COMMON LODGING HOUSES.

These houses are under the supervision of an experienced inspector and are generally well kept by the occupiers, having regard to the class of people inhabiting them.

The following statement indicates the scope of the work done in connection with them.

Number of houses on register	30
Number of lodgers allowed	2,083
Number of visits by day	1,433
Number of visits by night	122
Average number of persons found	1,605

HOUSES LET IN LODGINGS.

This group of lodging houses has always been the bugbear of the Public Health Department. For the most part they consist of rooms farmed out by a person who attempts to make a living by hiring poor-class property and furnishing the rooms in a very inefficient way and letting these furnished rooms at what appear to be exorbitant rents to persons of the thriftless, careless and poverty-stricken classes. The present shortage of houses for the poorest of the community has accentuated the problem of dealing adequately with these houses at the present time.

For the most part these unsuitable houses are let in single rooms at prices which vary from 7/6 to 15/- or more per week per room. Some of these rooms are attics with inadequate light. None of them has sufficient water supply.

One inspector devotes his whole time to their supervision.

The following tabular statement indicates the number of houses on the register and the inspections made.

Number of houses on register	696
Number of registered rooms in the houses ... ... •...	3,179
Number of these let as single rooms	1,433
Number let two or more rooms together	669
Certified accommodation	6,864 persons
Number of visits to the 696 houses	3,618
Notices for repairs	1,839
,, ,, overcrowding	19
,, ,, cleansing	551
,, ,, provision for cooking	71
,, ,, fire extinguishers	61
,, ,, lighting on stairs	62
,, ,, repairs to bedding	13

CANAL BOATS.

The following is a copy of the annual report required to be made under the Canal Boats Act:

The Council House,
Birmingham,
January 10th, 1927.

Gentlemen,

In compliance with Section 3 of the Canal Boats Act, 1884, I beg to submit the annual report of the work done by this Department during the year 1926, under the Canal Boats Acts 1877 and 1884, and the regulations under these Acts.

The Canal Boats Inspector for the City is Inspector W. G. E. Childs, who combines with this work the duties of Inspector of Common Lodging Houses. His salary for the joint appointment is 62/6 per week and bonus, with uniform and allowance for cycle.

Inspection of Boats.

During the year 1926, the number of boats inspected on the canals within the City area was 1,081, and the number of inspections during each quarter is shown as follows:—

During the first quarter of the year	301	boats were examined.
,, second ,, ,,	269	,, ,,
,, third ,, ,,	236	,, ,,
,, fourth ,, ,,	275	,, ,,
Total ...	1,081	

The 1,081 boats inspected were registered for the accommodation of 3,464 persons and when inspected were found to be carrying 1,216 men, 797 women and 888 children, a total of 2,901 persons, represented in terms of adults as 2,457.

The following table shows the number of boats inspected during the last five years, giving the number of persons whom the boats were registered to accommodate and the actual number of occupants at the time of inspection.

Year.	No. of boats inspected.	Registered to carry (adults).	Actually occupied by Men.	Women.	Children.	Total occupying.	Equivalent to adults.
1922 ...	1,093	3,414	1,319	842	873	3,034	2,743
1923 ...	1,107	3,730	1,396	878	960	3,234	2,914
1924 ...	1,127	3,590	1,358	833	872	3,063	2,772
1925 ...	1,150	3,712½	1,414	816	798	3,028	2,629
1926 ...	1,081	3,464	1,216	797	888	2,901	2,457

Of the 1,081 boats inspected during the year it was found that 954 or 89 per cent. were in good condition and conforming with the Acts and Regulations, while in 127 or 11 per cent. of the total, various contraventions were found. These are classified thus:—

Boats with one contravention each	55	making total contraventions	55
,, ,, two ,, ,,	45	,, ,, ,,	90
,, ,, three ,, ,,	12	,, ,, ,,	36
,, ,, four ,, ,,	15	,, ,, ,,	60
Totals ...	127		241

Complaint notes were duly served on the owners in all cases.

During the year certificates were returned by owners, signed by various Canal Boat Inspectors, showing that 243 complaints had been remedied.

The following table shows the number and character of contraventions found and remedied during the year:—

Contraventions referring to	Outstanding and brought forward from 1925.	Found during 1926.	Remedied during 1926.	Carried forward to 1927.
Cabins requiring painting	23	88	77	34
,, ,, repairs	14	42	48	8
,, ,, marking	21	53	62	12
Cabins leaking	6	37	32	11
Registrations	4	7	9	2
Not producing certificates	1	1	1	1
Dirty Cabins	—	1	1	—
Overcrowding	2	7	9	—
Separation of sexes	—	3	3	—
Water vessels	—	2	1	1
Pumps	—	—	—	—
Totals ...	71	241	243	69

It has not been necessary during the year to take any court proceedings under the above Acts or the Canal Boat Amendment Regulations, 1925.

INFECTIOUS DISEASES.

A case of Diphtheria was notified in the boat "Radford," Registered No. 130, Leicester, working between London and Birmingham. Owners: Messrs. Fellows, Morton and Clayton, Ltd., Birmingham.

This boat was occupied by Mrs. Annie Westwood, the skipper, Lily Westwood, and a child aged 6 years. The boat left London on June 25th and on arrival in Dudley on June 29th, the child exhibited symptoms of sore throat for the first time. The boat proceeded to Birmingham arriving on June 30th and on July 1st, the child was taken to the Out-patient Department of the General Hospital, Birmingham, where a diagnosis of Diphtheria was made. The child was detained and died in that Hospital the following day, the patient being too ill to be removed to the Isolation Hospital. On receipt of the notification the boat was taken out of commission and the owner notified, disinfection of the boat, bedclothing, etc., was carried out, and the Medical Officer of Health's clearance certificate was issued on July 7th.

REGISTRATION OF BOATS.

There were 15 boats registered during 1926 in Birmingham. One registration was cancelled, thus leaving a total of 551 boats on the Birmingham Register on December 31st, 1926.

The registrations were as follows:—

New motor-boats registered	8
New ordinary boats registered	4
Ordinary boats re-registered	3
	15
Registration cancelled	1
Increase	14

These re-registrations were due to change of ownership and name of boat and structural alteration. They were previously registered at Berkhampstead, Coventry and Leicester, which authorities were duly notified.

The number of boats on the Birmingham Register for the last five years has been as follows:—

December 31st,	1922, Boats on Register	516
,,	1923 ,, ...	526
,,	1924 ,, ...	534
,,	1925 ,, ...	537
,,	1926 ,, ...	551

The 551 boats on the register at present are classified as follows:—

Ordinary boats	479
Steam boats	11
Motor Boats	61
	551

I am, Gentlemen,

Your obedient servant,

W. H. DAVISON, M.B., D.P.H.

Senior Assistant Medical Officer of Health.

FACTORIES AND WORKSHOPS.

Three inspectors (two men and one woman) are engaged in seeing that the requirements of the Factory and Workshop Acts are carried out so far as these relate to the supervision by the local authority.

I. INSPECTION OF FACTORIES, WORKSHOPS AND WORKPLACES.

Premises. (1)	Number of Inspections. (2)	Written Notices. (3)	Occupiers Prosecuted. (4)
Factories (including Factory Laundries) ...	1,109	174	—
Workshops (including Workshop Laundries) ...	5,733	249	—
Workplaces (other than Outworkers' premises)	455	69	—
Re-Visits	3,338	—	—
Total	10,635	492	—

II. DEFECTS FOUND IN FACTORIES, WORKSHOPS AND WORKPLACES.

Particulars. (1)	Number of Defects. Found. (2)	Remedied. (3)	Referred to H.M. Inspector. (4)	Number of offences in respect to which Prosecutions were instituted (5)
Nuisances under the Public Health Acts :—*				
Want of cleanliness	1,377	1,373		
Want of ventilation	32	30		
Overcrowding	4	4		
Want of drainage of floors	4	3		
Other nuisances	564	558		
Sanitary accommodation :				
Insufficient	47	47		
Unsuitable or defective	917	913		
Not separate for sexes	46	45		
Offences under the Factory and Workshop Acts :				
Illegal occupation of underground bakehouses (s. 101)	—	—		
Other offences ... ... (Excluding offences relating to outwork and offences under the Sections mentioned in the Schedule to the Ministry of Health (Factories and Workshops Transfer of Powers) Order, 1921)	—	—		
Total	2,991	2,973	—	—

*Including those specified in sections 2, 3, 7 and 8 of the Factory and Workshop Act, 1901, as remediable under the Public Health Acts.

Two prosecutions were instituted for failing to send in lists of outworkers and in each case a fine of 40/- was imposed.

No cases of outwork being done in unwholesome premises were discovered.

SHOPS ACTS.

The total number of shops observed and visited during 1926 was as follows:—

Shops observed without entering	22,564
Systematic visits to shops	2,039
Re-visits	833
Special visits	555
Special night observations by temporary inspectors	1,301

Infringements found:—

Early closing notice not exhibited	155
Not closing shop to time	143
Exempted trade notice not exhibited	208
Young persons' notice not exhibited	15
Assistants' half-holiday not exhibited	83
Assistants' meal times not exhibited	12
Change of early closing day not notified	71
Not providing seats for female assistants	3
Not providing sanitary conveniences	4

Prosecutions	135

(a) *Butchers' Closing Order.*
1 case fined £4.
2 cases fined £3 each.
4 cases fined £2 each.
18 cases fined £1 each.
4 cases fined 10/- each.

(b) *Shops Act,* 1920.
1 case fined £2.
7 cases fined £1 each.
26 cases fined 10/- each.
1 case fined 7/6.
61 cases fined 5/- each.
2 cases fined 2/6 each.
3 cases dismissed.

(c) *Shops Act* (1912).
1 case fined £1.
1 case fined 10/-.
3 cases fined 5/- each.

SCHOOLS.

Under the Birmingham Corporation Act, 1914, parents of children attending school are required to notify the Head Teacher whenever a case of infectious disease occurs in the family. All such notifications are forwarded to the Medical Officer of Health by the Head Teacher, and the house is immediately visited by a health visitor and instructions are given verbally as to exclusion from school. On the following day a written exclusion notice is sent both to the Head Teacher and to the Attendance Officer (see Health Visitors' Work, page 23).

In the cases of scarlet fever and diphtheria an exclusion notice is issued after a visit by the sanitary inspector, and a re-admission notice is also sent when it is considered safe to resume attendance.

Full particulars as to the health of school children are given in the Annual Report of the School Medical Officer.

IV. HOUSING IN 1926.

The total number of new houses built in the City and certified as fit for habitation was 6,934, of which number 5,159 were built by the Municipality and 1,775 by private enterprise.

The following table shows the number built during each year since 1920:—

	No. of houses erected by private enterprise.	Corporation houses.	Total.
1920	244	407	651
1921	426	970	1,396
1922	382	902	1,284
1923	556	1,508	2,064
1924	1,201	1,663	2,864
1925	1,774	3,066	4,840
1926	1,775	5,159	6,934
Total ...	6,358	13,675	20,033

The rate of house building since 1901 is indicated in the following table:—

		New houses per 100,000 of the population.
Average yearly number of houses 1901-1910. Prior to Finance Act, 1909.		377
1911	Insecurity of Investment	149
1912		130
1913		178
1914		158
1915	Building stopped by the War	71
1916		54
1917		38
1918		1
1919		5
1920	Building recommenced by subsidy, etc.	72
1921		152
1922		138
1923		221
1924		303
1925		508
1926		721

The wards in which new houses have been built since 1920 are indicated below:—

	Ward.	Houses erected by private enterprise.	Corporation Houses.	Total.
Central Wards.	St. Paul's	1	—	1
	St. Mary's	4	—	4
	Duddeston and Nechells ...	—	—	—
	St. Bartholomew's	1	—	1
	St. Martin's and Deritend ...	—	—	—
	Market Hall	—	—	—
	Ladywood	—	—	—
		6	0	6
Middle Ring.	Lozells	—	—	—
	Aston	14	4	18
	Washwood Heath	114	1775	1889
	Saltley	23	1115	1138
	Small Heath	16	936	952
	Sparkbrook	2	—	2
	Balsall Heath	8	—	8
	Edgbaston	327	—	327
	Rotton Park	91	—	91
	All Saints'	8	—	8
		603	3830	4433

	Ward.	Houses erected by private enterprise	Corporation Houses.	Total.
Outer Ring.	Soho	57	—	57
	Sandwell	128	273	401
	Handsworth	233	110	343
	Erdington North	648	2699	3347
	Erdington South	251	624	875
	Yardley	400	1078	1478
	Acocks Green	511	1068	1579
	Sparkhill	1201	1882	3083
	Moseley and Kings Heath	732	1461	2193
	Selly Oak	353	0	353
	King's Norton	199	350	549
	Northfield	761	284	1045
	Harborne	275	16	291
		5749	9845	15594
	Total	6358	13675	20033

The figures above indicate that more houses are now being built than are necessary to meet the needs of the normal increase of population. During the last two years about 4,400 houses have been built towards the arrears of the last 16 years.

Many calculations have been made as to the number of houses still required. If the rate of building in the years 1901-10 (that is, normal years) is taken as a standard, then there is still a shortage of about 27,500 new houses.

It must be kept in mind that every year old dwellings are becoming worn out and require to be demolished. So, too, a considerable number of dwellings are pulled down every year for factory or other commercial purposes and for public improvements.

At the present time old worn out houses are being allowed to remain while many industries are cramped because they cannot enlarge their business premises, as they cannot turn out the tenants of the dwellings which they have purchased for extension.

But apart from all theoretical considerations as to the requirements, the practical fact is that there is still great distress because of house shortage and particularly of houses for which persons of the labouring class can pay.

The following report and plan was presented on May 28th dealing with an unhealthy area in St. Mary's Ward:—

" PUBLIC HEALTH DEPARTMENT.

" The Council House,
" Congreve Street Entrance,
" Birmingham.

" HOUSING ACT, 1925.

" Lower Tower Street, etc., Area.

" To the Town Council of the City of Birmingham.

" I, John Robertson, M.D., B.Sc., Medical Officer of Health for the City of Birmingham do hereby represent in accordance with the provisions of Sections 35 and 36 of the Housing Act, 1925, that in my opinion, within the area bounded on the West by Summer Lane, on the North by Lower Tower Street, on the East by Newtown Row, on the South-east by Cecil Street, and on the South by Hanley Street, there are certain houses and courts which are unfit for human habitation and the narrowness, closeness and bad arrangement and the bad condition of the streets and houses or groups of houses within such area and the want of light, air, ventilation and proper conveniences and other sanitary defects are dangerous or injurious to the health of the inhabitants of the buildings in the said area, and that the most satisfactory method of dealing with the evils connected with such houses and courts and the sanitary defects in the area is an improvement scheme for the re-arrangement and reconstruction of some of the streets and houses within the area.

Dated this 28th day of May, 1926.

JOHN ROBERTSON,
Medical Officer of Health.

" This area is bounded on the North by Lower Tower Street, on the West by Summer Lane, on the South by Hanley Street, on the South-east by Cecil Street, and on the East by Newtown Row. It forms part of St. Mary's Municipal Ward.

" Size of the Area. If one half of the roads forming the boundary are included in the area, the acreage is 11.66 acres.

" The area occupied by workshops is 1.65 acres.

" Approximately, therefore, the area occupied by dwellings and by streets, courtyards, etc., is 10.015 acres.

" The number of houses in the area is 517.

" The number of houses per acre is 51.62.

" This indicates in my opinion that the area is a very congested one.

" Streets. The existing traffic streets in the area and those forming the boundary of the area are of the following widths:—

Lower Tower Street (between building lines)	47	feet.
New Summer Street	47	,,
Hanley Street	42	,,
Cecil Street	42	,,
Newtown Row	47-50	,,
Summer Lane	53	,,
Ward Street	47	,,

" From the above it will be seen that the traffic streets are sufficient so far as width is concerned.

" By Section 135 of the Housing Act of 1925 the word " street " is defined as including any court, passage, square, or row of houses.

" The area is crowded with courts, most of which give insufficient air space for the dwellings, and in several cases they are so narrow as to lead to obstruction to light from neighbouring buildings.

" Parks and Open Spaces. There is no park or open space on the area and none in close proximity to the area. Children living in this area have to use the streets and courtyards for their recreation. There is no park in the proper sense of the word within some miles of the area, indeed, there is practically nothing green in the area or near it.

" The Atmosphere. Nearly the whole of the area is dirty by reason of the numerous factories on the area or in close proximity to it, and in addition to this, part of the area is often clouded over by condensed steam from the Electric Generating Station in Summer Lane.

" The Houses. There are 433 houses of the back-to-back type, i.e., 84 per cent., the remaining 84 houses having through ventilation. Nearly all the back-to-back houses are of a small type, viz., a living room and two bedrooms. The only houses of modern design are those numbered 94-102, New Summer Street, which were erected under modern bye-laws. Some of the public houses have either been entirely rebuilt or so substantially altered as to bring them up to reasonable requirements. The remainder of the dwellings are old, approximating to 100 years.

" Most of the dwellings on the area are leasehold. From experience in the past I believe that most of the leases are either near their expiration or have had a short extension granted, but no information has been asked for on this point.

" Water Supply. 246 dwelling houses, i.e., 47 per cent., have a water supply laid on inside the dwelling. The remaining dwellings obtain their supply from a standpipe in the yard or in wash-houses in the common courtyard.

" Lighting. 280 dwelling houses, i.e., about one-half, have gas or electric supply for lighting or cooking in the dwelling.

237 houses have no gas for lighting or cooking.

In 42 courtyards there is a gas lamp, and in 21 courtyards there is no gas lamp.

" Paving. Practically all the common courtyards are paved.

" Closet Accommodation. 31 houses have a water-closet attached to the individual house. All the others have closets in common, for the most part one closet to two houses, and these in certain cases are at a considerable distance from the dwelling house. The closets are in groups, they are frequently kept in a dirty condition, and from their situation and arrangement, their use places a considerable strain on the feelings of those who desire privacy and decency. Attached to many of the closets and exposed to many of them are urinals.

" Wash-Houses. These are provided in the courtyards, usually in the proportion of one wash-house to four dwelling houses.

" Orientation. Of the 433 back-to-back houses, 76 or 17.5 per cent. face due North, 109 face West, 83 face South, and 121 face East. Forty-four face in intermediate directions.

The total number of self-contained houses in the area is 29.

“ The following is a list of factories and workshops in the area :—

WORKSHOPS, OCCUPIERS, AND NATURE OF BUSINESS.

Number on map.	Situation of premises.	Occupiers and nature of business.
I.	41 and 42, Summer Lane	Levenstein and Abrahams, Tailors.
II.	Back 47 and 50, Summer Lane ...	W. Clutterbuck, Cabinet Maker and Upholsterer.
III.	55-57 and bk. 58 and 59, Summer Lane	Whitaker, Cutler and Co., Stampers and Piercers.
IV.	Between 59 & 64, Lower Tower Street	Clement White, Ltd., Cabinet Makers and Wood Working Specialists.
V.	82½, Lower Tower Street	Harris Bros., Tower Wheel Co.
VI.	Bk. 91 and 92, Lower Tower Street ...	C. E. Booth, Wire Gauze-Maker.
VII.	Back 91 and 92, Lower Tower Street ...	Void shopping over wash-houses.
VIII.	Adjoining No. 8, Cecil Street	Maddocks and Walford, Saw Mills.
IX. (Ground Floor)	Back 9, Cecil Street	T. G. Rowley, Wooden Toy Maker.
IX. (First Floor)	Back 9, Cecil Street	T. A. Millington, Wire Weaver.
X.	8a, Cecil Street	B. Savory, Carpenter and Joiner.
X.	8a, Cecil Street	W. Benson, Cycle and Motor Wheel Maker.
XI.	Adjoining 12, Cecil Street	J. Birch (B'ham), Ltd., Scrap Metal Yard.
XII.	Back living room of 28, Cecil Street, and void shopping at rear	Isaac Herbert, Brass Knob Maker.
XIII.	Back living room at 38, Cecil Street ...	W. Evans, Spectacle Wire Drawer.
XIV.	Back 39, Cecil Street	A. J. Parker, Gun and Rifle Maker.
XV.	Back 12, Hanley Street ... ... (Over Wash-houses).	Samuel Soden, Upholsterer.
XVI.	Back 12, Hanley Street ... ... (Over Wash-houses).	— White, Defiance Ring Works.
XVII.	Back 6-9, Hanley Street	Charles Graystone, Carpenter and Joiner.
XVIII.	Back 6, Hanley Street ... ... (Over Wash-houses).	Bert Bellamy, Wire Worker.
XIX.	Back 5, Hanley Street	Thompson, 4, Hanley Street, Stable used as wood dust store.
XX.	Back 31, Summer Lane	G. Hipwood and Co., Wireworkers.
XXI.	Back 33, Summer Lane	Everett, Bakery.
XXII.	Back 34, Summer Lane	— Wisdom, Jewel Case Maker.
XXIII.	Back 35, Summer Lane	Osborne, Thompson & Co., Engineers and Tool Makers
XXIV.	Back 37, Summer Lane	— Wireless Parts.
XXV.	Back 37, Summer Lane	W. Lewis, Blacksmith.
XXVI.	Back 75, New Summer Street	B'ham Jewellery Case Co. (Arthur Price & Co.).
XXVII.	Back 75, New Summer Street	F. Osborne & Co., Press Workers.
XXVIII.	Back 75, New Summer Street	R. Keith & Co., Pressworkers.
XXIX.	Back 75, New Summer Street	Stone and Stone, Stationery Factors.
XXX.	95 and 97, New Summer Street ...	Elsom and Co., Cycle Frame and Components.
XXXI.	109, New Summer Street	Edwin Arculus, Bakery.
XXXII.	Adjoining 123, New Summer Street	J. Birch (B'ham), Ltd., Scrap Metal Yard.
XXXIII.	124, New Summer Street	W. Rice, Coal Merchant.
XXXIV.	Back 116, New Summer Street ...	Stable used as store by Sketchley, Rags and Bones Dealer.
XXXV.	33, Ward Street	G. Deeming and Son, Packing Case Makers.
XXXVI.	Back 4 and 5, Ward Street	New and Powell, Stampers and Piercers.
XXXVII.	Adjoining 86, New Summer Street ...	J. Birch (B'ham), Ltd., Scrap Metal Yard.
XXXVIII.	Back 66, New Summer Street	— Ashford, Rag and Bone Store.

“ OVERCROWDING.

“ The total population at present is 2,703. Of these 1,777 are over 14 years of age, and 926 are under 14. The population is equal to 270 persons per acre or 5.23 persons per house. These figures indicate overcrowding on the area and congestion in the houses.

“ If one accepts the criterion of overcrowding to be defined as follows “more than four persons per bedroom or where persons of opposite sexes over 13 years of age have to occupy the same room,” then 22.63 per cent. of the houses are overcrowded, and many of them are grossly overcrowded.

“ 16 houses were overcrowded because they had more than four persons per room.

" 76 houses were overcrowded because they did not admit of decent separation of the sexes, and 25 houses were overcrowded both on the ground that they had more than four persons per room and also that they did not allow of separation of the sexes.

" In 88 houses there were two distinct families, each consisting of husband wife, and one or more children.

" In 29 houses there were lodgers, and in a good many other houses there were parents with married sons or daughters living in the same house producing overcrowding.

" The overcrowding in this area is probably as bad, if not worse, than in any other area of the City.

" HEALTH OF THE PEOPLE IN THE AREA.

" During the years 1920 to 1925 inclusive, there occurred in this area 292 deaths, an average of 49 per annum. Based upon the population ascertained in April, 1926, this gives a death-rate of 18.1 per 1,000.

" St. Mary's Word, of which this area forms a part, has for a great many years had the highest death-rates in the City, yet the death-rate in this part of St. Mary's ward is higher than that in the whole ward, as will be seen from the table of comparative statistics shown below :—

	Area represented.	Whole of St. Mary's ward.	Saltley ward.
Birth-rate	34.0	31.7	22.1
Death-rate	18.1	17.3	9.7
Infant Mortality rate	133	113	75
Tuberculosis death-rate	2.03	1.89	.92
Measles death-rate	.48	.27	.07
Pneumonia death-rate	2.11	2.04	.70
Bronchitis death-rate	1.74	1.75	.83
Diarrhœa death-rate	1.18	0.83	.38

" The above table shows that this area is distinctly more unwholesome than the whole of St. Mary's ward and very much more unhealthy, judged by its death-rates, than such an artisan ward as Saltley.

" The area in question, therefore, is not only an unhealthy area, but it is congested and overcrowded. It is filled with old property, and has none of the reasonable amenities for healthy living."

The following statement is inserted at the request of the Ministry of Health.

HOUSING.

Number of new houses erected during the year 1926—

(a) Total 6,934
(b) With State assistance under the Housing Acts—
(1) By the Local Authority 5,159
(2) By other bodies or persons 1,775

1. UNFIT DWELLING HOUSES.

Inspection—(1) Total number of dwelling-houses inspected for housing defects (under Public Health or Housing Acts) 43,481

(2) Number of dwelling-houses which were inspected and recorded under the Housing (Consolidated) Regulations, 1925 3,868

(3) Number of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation 5

(4) Number of dwelling-houses (exclusive of those referred to under the preceding sub-heading) found not to be in all respects reasonably fit for human habitation 36,481

2. REMEDY OF DEFECTS WITHOUT SERVICE OF FORMAL NOTICES.

Number of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their Officers 28,771

3. ACTION UNDER STATUTORY POWERS.

A. Proceedings under Section 3 of the Housing Act, 1925.

(1) Number of dwelling-houses in respect of which notices were served requiring repairs 96

(2) Number of dwelling-houses which were rendered fit after service of formal notices—
(a) By owners 86
(b) By Local Authority in default of owners 32

(3) Number of dwelling-houses in respect of which Closing Orders became operative in pursuance of declaration by owners of intention to close 22

B. Proceedings under Public Health Acts.

(1) Number of dwelling-houses in respect of which notices were served required defects to be remedied 7,619

(2) Number of dwelling-houses in which defects were remedied after service of formal notices—

(a) By owners 5,957

(b) By Local Authority in default of owners 0

C. Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925.

(1) Number of representations made with a view to the making of Closing Orders ... 5

(2) Number of dwelling-houses in respect of which Closing Orders were made 3

(3) Number of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit 1

(4) Number of dwelling-houses in respect of which Demolition Orders were made ... 0

(5) Number of dwelling-houses demolished in pursuance of Demolition Orders 0

V.—INSPECTION AND SUPERVISION OF FOOD.

THE MILK SUPPLY.

The whole of the Birmingham milk supply, with the exception of a small amount produced from farms in the outlying parts of the City, comes from farms outside the City boundary, situated for the most part within an area of 50 miles radius. By far the greater part of the milk is delivered once daily, only a small proportion being sent in twice daily. About 75 per cent. is at the present time road-borne, the remainder coming by rail.

Treatment of Milk.

Owing to the variable and frequently somewhat long interval, which elapses between the production of milk and the time at which it is possible for it to be delivered to the consumer, the bulk of the milk is treated by heat in some way, with the primary object, from the dairyman's point of view, of improving its keeping qualities. The two main methods of treatment are Sterilisation and Pasteurisation, and about 75 per cent. of the supply is submitted to one or the other of these processes.

Sterilisation of Milk.

In this process the milk is first homogenised, that is, treated in such a way that the fat globules are broken up so that the cream no longer rises, next, filled into clean bottles, and the bottles containing the milk are then held at or near a temperature of 212°F. by keeping them in boiling water for 20 minutes to half an hour. The milk is finally cooled after the bottles have been stoppered.

Though this method of treatment does not kill all the organisms originally present in the milk, yet the number is so much reduced that the milk will keep good for several days. Owing to its improved keeping qualities, and the fact that the same care in its handling is not necessary in the home to prevent its souring, this milk has a very wide sale in the poorer districts of the City. Probably about one-half of the total supply of milk is sterilised.

Pasteurisation of Milk.

Two varieties of this method are in operation in Birmingham.

1. *Flash Point Pasteurisation.*—In this process the milk is raised to a temperature of 160° to 170°F. for a few seconds and then cooled. The keeping qualities of the milk are improved, but the process is unreliable. Most of the milk thus treated is sold loose.

2. *Pasteurisation by the Positive Holder Process.*—In this method the milk is retained in a holder at a temperature of 140° to 145°F. for half an hour. The milk, after cooling, is either sold loose from the churn or filled into bottles. This process insures the destruction of all disease producing germs. In the old retarder process the milk flows slowly through a tank kept at the required temperature, but owing to the difficulty of ensuring that all milk is retained for the correct length of time, this process is not now approved.

There are now thirteen firms in Birmingham who have an efficient modern Pasteurising plant. In its ordinary form the construction and working of such a plant is as follows:—The milk is first treated by passing through a *cleaner*, which has the form either of a cloth strainer, through which filtration under pressure takes place, or of a centrifugal machine, either of which removes all visible dirt. From these it passes to the *pasteuriser*, which consists of a chamber jacketed with steam, or, in the better forms, with hot water, in which, while passing rapidly through, it is raised to a temperature of about 145°F. After leaving the pasteuriser the milk is retained at a temperature of 145°—150°F. in the *holder*, which is water-jacketed, and so arranged with a number of separate chambers that every part of the milk is held at least half-an-hour. From the holder the milk is cooled to a temperature generally a few degrees above 32°F. by passing over a *cooler*, consisting of an arrangement of tubes through which flow, in the upper section cold water, and in the lower section, cooled brine, the milk flowing successively over these sections. The milk is then either filled into churns or bottles as the case may be.

The sale of efficiently Pasteurised bottled milk is increasing, though somewhat slowly, in the City. This class of milk finds its readiest sale in the better class districts. There is still some unjustified prejudice against the use of Pasteurised milk, where it is sold as such. If it were generally known that the bulk of the milk sold loose has in actual fact been Pasteurised in some way, there would be less prejudice against milk sold in bottles and designated as Pasteurised.

BACTERIAL CONTROL OF PASTEURISED MILK.

The following table shows the results of bacteriological examinations :—

BIRMINGHAM PASTEURISERS, 1926.

Positive Holder Process.

	RAW MILK.		PASTEURISED MILK.	
No. of the Pasteuriser.	No. of Samples.	Average Bacteria.	No. of Samples.	Average Bacteria.
1.	11	113,622	47	3,881
2.	32	495,114	66	6,074
3.	29	194,967	62	13,233
4.	25	858,669	52	3,212
5.	26	431,470	37	19,534
6.	24	768,001	49	29,466
7.	26	304,318	37	50,149
8.	28	523,822	38	5,460
9.	30	1,124,384	61	38,047
10.	9	79,115	20	16,505
11.	33	1,484,982	61	14,844
12.	17	329,453	2	1,073,850
		Continuous Flow Retarding Process.		
13.	17	473,241	41	7,510
14.	25	944,172	36	15,267
		Flash Point Process.		
15.	2	9,950	6	38,926
16.	25	196,164	23	13,721
17.	8	178,543	8	77,365
18.	13	618,815	24	1,830
19.	5	5,502	—	—
20.	4	285,732	3	55,066
21.	3	2,578,600	3	6,426
22.	20	36,546	12	40,199
23.	17	329,682	24	8,252
24.	11	7,794	1	25,100

If one disregards the results of the examinations of samples treated by the flash point process, which is admittedly unreliable, the figures from Pasteurisation plants where the positive holder process is used indicate that in many cases the process is not properly carried out. There can, however, be little doubt that, in other cases, the system of frequent bacterial counts, of the results of which the dairyman is informed, has enabled many pasteurisers to control the method and obtain better results. Where the figures indicate some possible defect, either in the plant or in its method of working, visits are paid by one of the assistant medical officers in order to try to discover the cause of the unsatisfactory results. The most usual defect found has been a failure to cleanse and efficiently sterilise the plant.

It may be said that when effective care an supervision are maintained the bacteriological examination of samples of Pasteurised milk should, and does in fact, yield results well below the mark of 10,000 organisms per c.c.

MILK (SPECIAL DESIGNATIONS) ORDER, 1923.

The following licences were granted during 1926:—

1. Producer's licence to sell Certified Milk, granted by Ministry of Health to Messrs. A. J. Follows and Son	1
2. Dealer's licence to sell Certified Milk:	
Messrs. Wathes, Cattell and Gurden Mr. David M. Dargie	2
3. Dealer's licence to sell Grade A (Tuberculin Tested) Milk:	
Messrs. The Midland Counties Dairy, Ltd.	1
4. Dealer's licence to sell Grade A Milk:	
Messrs. White Bros.	1
5. Licences to sell Pasteurised Milk:	
(a) *Pasteurisers' Licences*:—	
Messrs. The Midland Counties Dairy Co. Messrs. Wathes, Cattell and Gurden, Ltd. Messrs. The Birmingham Co-operative Society, Ltd. Messrs. A. J. Follows and Son. Messrs. The Midland Dairy Farmers, Ltd. Mr. E. Denzil Ede. Messrs. Fowler Bros. Messrs. R. Martin and Co., Ltd. Messrs. Thomas Shaw and Sons. Mr. F. V. Billingsley. Mr. H. Marsden.	11
(b) *Dealer's Licences*	43
(c) *Supplementary Licence*:	
Messrs. Bray and Bailey, Smethwick	1

The sale of Certified, Grade A (Tuberculin Tested) and Grade A Milks is relatively small in amount, and at the beginning of the year 1927 reached an average per day of:—

Certified Milk	135 gallons.
Grade A (Tuberculin Tested)	95 ,,
Grade A	44 ,,

At the present time the prices of the above grades of milk are as follows:—Certified, 6d. and 4½d.; Grade A, Tuberculin Tested, 4½d.; and Grade A, 4d. a pint.

The sale is increasing slowly, but the increased price, as compared with ordinary milk, and the fact that in some districts a supply is not readily available to meet a demand tend to restrict consumption of these kinds of milk.

In order to comply with the requirements of the Order of the Ministry of Health, milk designated as Pasteurised must have been treated by the positive holder process and must be sold in bottles labelled "Pasteurised."

As stated above there are now thirteen firms who have installed efficient modern Pasteurising plant. All but two of these hold a licence to use the designation "Pasteurised." This licence is only granted after the premises and plant have been inspected and found to be satisfactory. In actual fact the firms holding the licence do not make full use of this, and only a small proportion of the milk treated by them is bottled and sold in bottles labelled as "Pasteurised." A large proportion is bottled and sold without the official label, but in all other respects agrees with the conditions laid down in the order of the Ministry of Health; while the remainder of the treated milk is sold loose, a method of sale which, of course, does not comply with the official standard for Pasteurised milk.

Registration and Inspection of Milkshops.

Two Inspectors are wholly employed in visiting the milk shops, purveyors, depots and railway stations in order to see that reasonable conditions are maintained in handling milk. They also look after the numerous alterations in registration. Their work is indicated by the statement below.

No. of Milkshops on Register	3,847
No. of Wholesale Purveyors on Register	48
No. of Retail Purveyors on Register	787
New milkshops registered	58
New Wholesale Purveyors registered	46
New Retail Purveyors registered	175
Milkshop transfers	249
No. of visits to Milkshops	4,489
No. of visits to Wholesale Purveyors	69
No. of visits to Retail Purveyors	1,446
No. of visits to Railway Stations	33
Milk vessels examined at Milkshops	6,509
Milk churns examined at stations	354
Milk churns examined at Depots	560
Milkshops and Stores limewashed	32
Sanitary defects found	11
Other contraventions	4
Cases of infectious disease reported	57
Milkshops registrations cancelled	488
Retail Purveyors' registrations cancelled	103

The Milk and Dairies Order, 1926.

The coming into force on October 1st, 1926, of the above Order, made under the Milk and Dairies (Consolidation) Act, 1915, which became effective in the previous year, has necessitated certain additional work and alterations of procedure on the part of the milk inspectors.

This Order incorporates many of the provisions of the old Dairies, Cowsheds and Milkshops Order, 1885, which it supersedes; it also contains provisions similar to those contained in the Birmingham bye-laws, which in common with all other local bye-laws, it repeals; while, in addition, some provisions are new. The Order enables closer supervision to be maintained on purveyors of milk who sell milk wholesale or on a round, in that it provides that all milk vessels, whether containing milk or not, must be stored in a properly constituted dairy. The obligation is laid upon all purveyors of milk thoroughly to cleanse churns before returning them to the farmer. Not only is the practice of filling bottles on the round made illegal, a practice which, in fact, was not carried out in Birmingham, but the custom of opening a bottle of sterilised milk in order to sell a portion is also prohibited.

Prosecutions.

One prosecution was successfully undertaken during the year against a firm of dairymen for failing to give an inspector reasonable assistance in the inspection of a dairy by keeping the dairy locked up, contrary to the provisions of the Milk and Dairies (Consolidation) Act, 1915, and for failing to store their vessels in a clean place. The dairy had in actual fact been converted from its proper use to that of a motor garage.

INSPECTION OF COWS AND COWSHEDS IN THE CITY.

(Report by Mr. Brennan De Vine, F.R.C.V.S., Veterinary Superintendent).

The Milk and Dairies Order 1926 made under the Milk and Dairies (Consolidation) Act 1915 which came into force 1st day of October, 1926, is to be enforced by all Local Authorities and revokes previous Orders and Regulations.

Prior to the introduction of this Order, the systematic inspection of cowsheds and cattle in city dairies registered under the Dairies, Cowsheds and Milk Shops Order of 1885 was carried out in Birmingham by the Veterinary Staff.

The new regulations, being similar to those previously in force in Birmingham, will therefore make very little difference to the present system of Veterinary Inspection.

The following table shows the number of registered sheds, the number of visits paid by the Veterinary Inspectors to City Dairies, and the number of cows in City Dairies at 31st December, 1926, as compared with the previous year:—

	Dairy farms.	Cowsheds.	Dairy Cows.	Visits to sheds.
31st December, 1926	117	240	1,558	2,909
31st December, 1925	123	252	1,513	2,901

Cows.

The health condition and cleanliness of the cows inspected has been good and in only three cases was it found necessary to call the attention of the owners to the dirty condition of the cows.

Mastitis. Twenty-two cows were found to be affected with acute catarrhal mastitis. In each case the owners were notified that the milk from these cows should not be sold for human consumption, and where possible the animals were kept isolated from the rest of the herd.

Tuberculosis. 28 suspected cases of tuberculosis were dealt with and in 21 cases tuberculosis was confirmed.

Cowsheds.

These have been regularly inspected, special attention being paid to adequate lighting, ventilation including air-space; and the cleansing, drainage and water-supply.

In five cases it was found necessary to write to the Cow-keepers requesting them to thoroughly clean their sheds.

The limewashing of all the cow-sheds was carried out during the summer months while the cows were out at grass.

Of the 240 sheds on the register 238 have been given registration numbers and the other 2 are being altered to meet our requirements prior to registration.

During the year one shed has been rebuilt after being destroyed by fire and four other buildings have been converted into cowsheds. Two sheds have been repaired according to instructions.

New Cowkeepers. 3 applications were received from dairymen to commence keeping cows in the City for the sale of milk. In each case, as the sheds had been registered previously and were in a good state of repair, the applicant's name was placed on the register.

Dairies Discontinued. 9 dairymen have discontinued keeping cows, and their names have been removed from the register.

Changes of Occupancy.. In 10 cases farms have changed hands, and the register has been rectified accordingly.

TUBERCULOSIS AND THE MILK SUPPLY.

Report by Mr. Brennan De Vine, F.R.C.V.S., (Veterinary Superintendent).

The precautions to reduce the amount of tubercle infection in the milk sold in the City have been continued on similar lines as in previous years, namely:—

(*a*) The detection of infection in the milk supply both from city dairies and outside sources.

(*b*) The eradication of tuberculosis from dairy herds supplying milk to Birmingham.

(*a*) The Detection of Infection in the Milk Supply both from City Dairies and Outside Sources.

City Dairies. Samples of milk were collected from cows suspected of giving tuberculous milk, and the result of the examination was as follows:—

Number of individual Samples.	Result. Free.	Infected.	No. of Cows found to be giving tuberculous milk.
29	22	7	7

Outside Sources. In connection with the detection of infection in milk received in the city from outside dairies, the following is a summary of the result of the bacteriological examination of samples of milk collected from churns at various depots:—

County.	Depot Samples.	Result. Free.	Infected.	Percentage infected.
Derbyshire	20	17	3	15.0
Gloucestershire	12	12	—	—
Leicestershire	15	13	2	13.3
Shropshire	55	51	4	7.3
Staffordshire	236	206	30	12.7
Warwickshire	382	351	31	8.1
Worcestershire	91	90	1	1.1
	811	740	71	8.8

(Note.—From this summary it will be seen that of the 811 samples of milk collected at various depots within the city 8.8 per cent. were found on bacteriological examination to contain tubercle bacilli).

Following up the 71 infected Depot samples, in order to trace the tuberculous cows responsible for the infection in the milk, we visited the farms from which the infected milk came, examined 1,913 cows, and collected mixed and individual samples of milk, the bacteriological examination of which gave results as follows:—

County	Cows examined at farms	Total Samples of milk taken at farms		Samples found to be infected		Number of Tuberculous cows traced
		Mixed	Individual	Mixed	Individual	
Derbyshire	109	3	10	3	4	4
Leicestershire	43	2	6	2	2	2
Shropshire	176	6	14	1	3	3
Staffordshire	815	35	122	14	26	26
Warwickshire	751	38	121	20	27	27
Worcestershire	19	1	5	1	1	1
Total	1913	85	278	41	63	63

In the cases where we were unable to trace the animals responsible for the infection in the milk, investigations showed that cows had been sold out or disposed of for slaughter subsequent to our taking the Depot sample from churn and prior to our visit to the farm. In connection with the above, 134 visits were paid by the Veterinary Inspectors during the year to farms outside the city area.

TUBERCULOSIS ORDER 1925.

This Order provides for the notification by the owner of cattle affected with tuberculosis, and for the payment of compensation in respect of tuberculous cows slaughtered. 84 cows were dealt with under this Order as follows:—

City Dairies. 21 cows found affected with tuberculosis were slaughtered and subjected to post mortem examination, and in each case the diagnosis of tuberculosis was confirmed as under:—

(a)	Tuberculosis of the udder	4 cows
(b)	Tuberculous emaciation	15 ,,
(c)	Chronic cough and definite clinical signs	2 ,,
	Total	21 ,,

Outside Dairies. 63 tuberculous cows were traced in outside dairies, all of which were found to be giving tuberculous milk, and pointed out to the owners. We also notified the Local Authorities concerned, and received a report of the slaughter and post mortem examination of each cow. Of these 44 proved to be cases of advanced tuberculosis and 19 of tuberculosis of the udder.

(*b*) THE ERADICTION OF TUBERCULOSIS FROM DAIRY HERDS SUPPLYING MILK TO BIRMINGHAM.

In order to minimise the risk of tuberculous infection in the City's milk supply, the above scheme provides for the free tuberculin testing by the Veterinary Staff of the herds of any owners supplying milk to the City, and who are willing to comply with the conditions necessary to make the scheme a success.

At the beginning of the year there were 22 herds comprising 653 cows continuing in this scheme. During the year one herd was added, and another herd was temporarily withdrawn from the scheme.

Of the 22 herds in the scheme 5 are tested for Grade A (Tuberculin Tested) Milk.

The following is a list of herds dealt with under the scheme:—

No.	Approx. No. in Herd	Herds free	Herds being freed	Grade A milk	Breeding Herds	Non-Breeding Herds	Mixed Herds	City Dairies	Outside Dairies
1 ...	93	1	—	1	1	—	—	1	—
2 ...	12	1	—	—	—	1	—	1	—
3 ...	51	1	—	—	—	—	1	—	1
4 ...	58	1	—	1	1	—	—	—	1
5 ...	59	1	—	—	—	—	1	—	1
6			Temporarily Discontinued.						
7 ...	30	1	—	—	1	—	—	—	1
8 ...	28	1	—	—	—	—	1	—	1
9 ...	9	1	—	—	1	—	—	1	—
10 ...	21	1	—	—	1	—	—	—	1
11 ...	14	1	—	—	1	—	—	—	1
12 ...	20	1	—	—	1	—	—	—	1
13 ...	5	1	—	—	1	—	—	—	1
14 ...	15	1	—	—	—	—	1	1	—
15 ...	20	1	—	—	1	—	—	—	1
16 ...	14	1	—	—	1	—	—	—	1
17 ...	81	1	—	—	1	—	—	1	—
18 ...	39	1	—	—	1	—	—	—	1
19 ...	47	1	—	1	1	—	—	—	1
20 ...	16	1	—	1	1	—	—	—	1
21 ...	30	1	—	—	1	—	—	—	1
22 ...	20	1	—	1	—	1	—	—	1
23 ...	14	1	—	—	1	—	—	—	1
Totals	696	22	—	5	16	2	4	5	17

Cow Testing.

The testing of the herds which come under the scheme has been carried out half-yearly:—

No.	Cows Tested.	Passed.	Failed.	Doubtful.
1	288	260	28	—
2	15	15	—	—
3	117	117	—	—
4	59	58	1	—
5	59	50	9	—
6	20	13	7	—
7	59	58	1	—
8	55	48	7	—
9	23	21	2	—
10	40	39	1	—
11	14	14	—	—
12	36	36	—	—
13	10	10	—	—
14	30	30	—	—
15	41	41	—	—
16	32	29	2	1
17	170	168	2	—
18	78	77	1	—
19	112	112	—	—
20	38	38	—	—
21	68	63	5	—
22	43	30	8	5
23	28	23	4	1
Totals	1435	1350	78	7
Percentage		94.1	5.4	.5

Summary.

Dairy farms in the City	117
Milking Cows in the City	1,558
Visits to Sheds during 1926	2,909
Cows in City Dairies affected with Mastitis	22
Cows in City Dairies affected with Tuberculosis	21
Samples of Milk taken at Depots	811
Samples of Milk taken at Depots found to be infected	71
Visits to Outside Farms during 1926	134
Herds Tested (including Grade "A")	23
Cows tested	1,435
Cows which passed the test	1,350
Cows which failed to pass the test	85

INSPECTION OF MEAT AND OTHER FOODS.

(By Mr. Brennan De Vine, F.R.C.V.S., Veterinary Superintendent).

For the purposes of inspection the City is divided into four districts, a Food Inspector being placed in charge of each district. The inspection work in the Public Abattoirs and the Wholesale Fish and Vegetable Markets is carried out by Inspectors who are constantly employed there.

Slaughterhouses.

All the private slaughterhouses in the City have been regularly visited and during the year 6,906 visits of inspection were made.

Changes of Occupancy. 4 applications for change of occupancy of private slaughterhouses were submitted to the Markets and Fairs Committee. In each case the premises were inspected, and as they were found in a sanitary condition the applications were in each case acceded to.

Register. At the 31st December 1926, there were 106 private slaughterhouses and two knackeries in use.

Registered Slaughterhouses	54
Annually licenced slaughterhouses	52
Knackeries	2
	108

Registered Food Preparation Premises.

Section 33 of the Birmingham Corporation Act, 1914, provides that:—

(1) Any premises used or proposed to be used for the preparation or manufacture of potted or preserved meat, fish, or other food, intended for the purpose of sale shall be registered by the owner or occupier thereof with the Corporation from time to time, and no premises shall be used for the purposes aforesaid unless the same are registered as aforesaid.

The following is a summary of the Food Preparation Premises registered at 31st December, 1926:—

	No. in City.
A-la-mode Beef	100
Sausage Manufacturers	40
Pork Pie Manufacturers	50
Tripe Dressers	45
Potted and Cooked Meat Manufacturers	137
Ham Manufacturers	6
Jam Manufacturers	1
31st December, 1926 ...	379
31st December, 1925 ...	356

Visits of Inspection.

During the year 81,294 visits of inspection were paid by the Inspectors as compared with 70,851 visits in 1925, namely:—

	Visits of Inspection. 1926.	1925.
Slaughterhouses	6,906	5,817
Beef Butchers	18,617	17,125
Pork Butchers	6,670	5,847
Fishmongers	7,142	6,710
Fruiterers	9,237	8,092
Provision Dealers	609	649
Ham and Bacon Dressers	725	795
Street Hawkers	1,077	1,166
Inspections by Request	13	6
Wholesale Provision Merchants	17,092	17,357
Cold Stores	5,407	2,116
A-la-Mode Beef Dealers	3,566	2,188
Tripe Dealers	136	171
Caterers	70	188
Fish Friers	2,773	2,457
Jam, etc., Manufacturers	2	4
Horse Flesh Shops	18	5
Sausage and Pork Pie Manufacturers ...	1,234	158
	81,294	70,851

The above work does not include the inspection work at the City Meat Market, visits to stalls in the Market Hall, Fish Market, Vegetable Market or Bell Street, there being Inspectors constantly employed in these Markets.

Slaughtering of Animals for Food.

The following is a return shewing the number of animals slaughtered in the Public Slaughterhouses during the year 1926 and the preceding year:—

City Meat Market.

	Beasts.	Calves.	Sheep and Lambs.	Pigs.	Total.
1926	45,105	53,414	250,144	33,017	381,680
1925	43,495	53,697	197,285	46,967	341,444

Montague Street.

	Beasts.	Sheep.	Goats.	Pigs.	Total.
1926	3	4	1	2,937	2,945
1925	5	—	1	5,564	5,570

Foreign Animals. The following is a return of foreign animals (included in the above returns) received in Birmingham for slaughter during the year:—

	Beasts.	Sheep and Lambs.	Pigs.	Total.
Irish	774	342	22,488	23,604
Canadian	2,736	—	—	2,736
Total 1926 ...	3,510	342	22,488	26,340
Total 1925 ...	4,094	865	4,352	9,311

The City Meat Market and Public Slaughterhouses were opened for business December 27th, 1897, and the following shows the total increase since 1898 in the number of animals slaughtered at the Public Abattoir:—

	Beasts.	Calves.	Sheep.	Pigs.	Total.
1926	45,105	53,414	250,144	33,017	381,680
1898	20,175	10,857	100,458	11,703	143,193
Increase	24,930	42,557	149,686	21,314	238,487
Increase %	123.6	392	149	182.1	166.5

In spite of the recent additions to the City Meat Market and provision of further lairage accommodation there is often considerable overcrowding of animals awaiting slaughter, it being sometimes necessary to utilise the pens attached to the slaughtering booths and passages to accommodate the overflow. The present accommodation is becoming increasingly insufficient for the growing demands.

UNSOUND MEAT, ETC.

Return of Diseased Organs Destroyed as Unfit for Human Food.

	Bulls.	Cows.	Calves.	Swine.	Sheep.	Goats.	Total
Lungs—							
Tuberculosis	569	1,713	74	2,657	—	—	5,013
Other Conditions	383	1,148	421	713	1,792	11	4,468
Hearts—							
Tuberculosis	382	1,171	75	2,662	—	—	4,290
Other Conditions	144	441	421	670	1,564	11	3,251
Bowels—							
Tuberculosis	452	1,367	37	2,595	—	—	4,451
Other Conditions	177	540	149	579	691	11	2,147
Stomachs—							
Tuberculosis	453	1,363	37	2,543	—	—	4,396
Other Conditions	262	798	149	419	676	11	2,315
Spleens—							
Tuberculosis	453	1,365	73	2,666	—	—	4,557
Other Conditions	229	689	419	614	1,609	11	3,571
Livers—							
Tuberculosis	462	1,399	74	2,667	—	—	4,602
Other Conditions	2,108	6,331	435	894	5,987	11	15,766
Kidneys—							
Tuberculosis	320	1,001	61	296	—	—	1,678
Other Conditions	196	595	292	182	1,297	22	2,584
Udders—							
Tuberculosis	—	475	—	252	—	—	727
Other Conditions	—	365	—	205	—	—	570
Heads—							
Tuberculosis	350	1,032	47	2,376	—	—	3,805
Other Conditions	187	561	191	164	1,269	11	2,383
Fore Quarters—							
Tuberculosis	17	62	9	3	—	—	91
Other Conditions	1	11	4	10	2	—	28
Hind Quarters—							
Tuberculosis	7	29	—	—	—	—	36
Other Conditions	6	28	10	6	4	—	54
Carcases—							
Tuberculosis	65	252	32	163	—	—	512
Other Conditions	98	301	220	266	1,165	15	2,065

MISCELLANEOUS.

The quantity of miscellaneous meat surrendered was approximately 19 tons 9 cwts., of which the greater part was considered unfit owing to putrefaction.

Weight of Meat Surrendered. The total weight of meat surrendered during the year was 602 tons, as compared with 539 tons during 1925. This included 316 carcases of calves for immaturity. The number of cases of surrender is 10,419.

Frozen Meat. During the year there were 6 tons 14 cwts. of frozen and chilled meat surrendered for putrefaction.

Return of Fish, Fruit, Vegetables, Poultry, etc., destroyed as unfit for food:—

No. of Surrenders.		T.	C.	Q.	LBS.
977	Fish	173	4	0	8
120	Shell Fish	17	19	1	6
1,213	Poultry, etc.	32	4	0	22
349	Fruit and Vegetables ...	219	12	3	24
157	Miscellaneous	6	13	2	23
2,816		449	14	0	27

SHELL FISH, ETC.

The following is a summary showing the samples taken during the year and submitted for bacteriological examination, of shell fish offered for sale on our market:—

Number of Samples.		Origin. English.	Irish.	Other Sources.
1	Oysters	1	—	—
93	Mussels	35	28	30
2	Cockles	—	—	2
8	Periwinkles	4	2	2
104		40	30	34

As the result of the bacteriological examination, mussels from two districts in England and two districts in Ireland, have been prohibited from being offered for sale on our Markets.

Clean handling of Fish. Complaints have been made from time to time respecting the methods employed in the handling of fish on our Market, especially the larger types, which, owing to their size and weight, traders have found more convenient to handle if placed on the floor of the stall or even on the pavement. The fish are no longer placed on the ground but on boards or in boxes which are regularly cleaned.

RESIDUAL VALUES.

For some years past applications have been received from time to time from members in the meat trade respecting the payment of residual values for condemned foodstuffs. A condemned Food Stuffs (Residual Values) Sub-Committee was formed and gave consideration to this matter. On 25th June the Markets and Fairs Committee passed the following resolution:—

> 9081. RESOLVED. That, as from the 1st June, 1926, compensation payable quarterly at the rate of 3s. per cwt. be allowed to owners in respect of the residual value of the carcases or parts of carcases of one cwt. and upwards of pigs which are condemned as unfit for human food, and are voluntarily surrendered, but that no such compensation be paid in respect of pigs which die in transit, this arrangement to operate for twelve months, the subject to be then further considered.

PUBLIC HEALTH (MEAT) REGULATIONS.

The object of these Regulations is to secure more adequate inspection of animals slaughtered in this country, and improvements in the handling, transport and distribution of meat.

Within the city area the conditions imposed by these Regulations particularly in connection with the notice of slaughter in private slaughterhouses, the covering of meat being brought through the streets, and in the exposure of meat outside shops, have been very well carried out by the Birmingham meat traders. There are no cases now in the city where meat is exposed outside the building, as formerly obtained before the introduction of these regulations.

Under Article 20 (5) of the Regulations, it is not permissible to expose meat for sale where it may be contaminated with dust or mud being splashed on it. In connection with the open windows of butchers' shops, there has been a great improvement in the city, a number of new butchers' shops were opened during the year, and all of them of the fixed window type. Many of the older shops are being converted from the open window to the fixed window type.

MISCELLANEOUS.

Importation of Raw Cherries Order of 1926. This Order was introduced 11th June, 1926. With a view to the prevention of the introduction of the Cherry Fruit Fly, the landing in England and Wales of raw Cherries shipped from France was prohibited unless accompanied by a special certificate to the effect that the cherries were grown in a Department in which the Cherry Fruit Fly is not known to exist.

There has been no case of raw cherries having been received on our market in contravention of this Order.

Sugar Sweepings. During the year notification was received of 281 bags (6 lots) of sugar sweepings being sent to Birmingham. On arrival these were subjected to a satisfactory process of refining, and before being allowed to be sold for human consumption were inspected and passed by us.

Arsenic in Apples. The Ministry of Health issued a circular letter No. 659 to all Local Authorities, drawing attention to the presence of considerable quantities of arsenic on the surface of certain imported apples, and the possibility of illness resulting from the consumption of such apples.

Samples of apples were taken and analysed for the presence of arsenic and it was found that some of the apples examined showed distinct evidence of contamination. The matter was referred to the Secretary of the Birmingham Wholesale Fruit and Potato Merchants' Association, with a view to effectively stopping the practice which resulted in the amount of arsenic found in certain varieties of apples.

Diseased Livers in Rabbits. A large percentage of the English rabbits sold on our markets were found to be affected with enlarged and diseased livers.

It has been the custom to sell rabbits by weight, livers being included. The selling of the livers with the carcases was considered highly undesirable, many of them being affected with coccidiosis. To prevent this practice the Markets and Fairs Committee passed the following Resolution:—

> No. 8919. RESOLVED. That the Chief Veterinary Inspector be instructed to notify all rabbit dealers in the city that rabbits with diseased internal organs must not be offered for sale, unless the diseased organs have been removed.

PROSECUTIONS.

The following is a summary of prosecutions in which convictions were obtained for offences under the Public Health Acts, the Public Health (Meat) Regulations, and offences against the Diseases of Animals Acts and Orders:—

	Number of Convictions.	Total of fines.
Diseased Meat	1	£5
Fish, fruit, etc.	—	—
Slaughtering on unlicensed premises	—	—
Public Health (Meat) Regulations	5	£9 10s.
Offences against Diseases of Animals Acts and Orders:—		
Foot and Mouth Disease	3	£1 10s.
Parasitic Mange	1	£1 10s.
Swine Fever	—	—

SALE OF FOOD AND DRUGS ACTS. MILK AND CREAM REGULATIONS.

Full particulars of the above are given in the Report of the City Analyst which is printed separately.

VI. PREVALENCE OF, AND CONTROL OVER, INFECTIOUS DISEASES.

INFECTIOUS DISEASES GENERALLY.

The deaths during 1926 from some of the chief infectious diseases were as follows:—

Disease.	Deaths in 1926.	Average 1916-25.	Above or below the average
Enteric Fever	3	5	— 2
Smallpox	0	0	—
Measles	78	145	— 67
Scarlet Fever	8	36	— 28
Whooping Cough	128	193	— 65
Diphtheria	116	126	— 10
Pulmonary Tuberculosis	905	982	— 77
Other Forms of Tuberculosis	119	171	— 52
Influenza	260	548	—288

The prevalence of the notifiable diseases is shown in the next table:—

Disease.	Cases in 1926.	Average 1916-25.	Above or below the average
Enteric Fever	52	26	+ 26
Smallpox	0	0	—
Scarlet Fever	1709	2562	— 853
Diphtheria	1804	1358	+ 446
Erysipelas	445	401	+ 44
Puerperal Fever	157	131	+ 26
Ophthalmia Neonatorum	395	362	+ 33
Pulmonary Tuberculosis	1421	2337	— 916
Other Forms of Tuberculosis	283	364	— 81
Acute Primary or Influenzal Pneumonia ...	2437	Only recently notifiable.	
Cerebro-Spinal Fever	10	16	— 6
Acute Poliomyelitis	38	15	+ 23
Polioencephalitis	4	Only recently notifiable.	
Encephalitis Lethargica	89	,,	,,
Malaria	2	,,	,,
Dysentery	6	,,	,,
Trench Fever	0	,,	,,

The elementary school teachers reported the following cases:—

Measles	6,980
German Measles	1,556
Whooping Cough	4,895
Chicken Pox	6,880
Mumps	6,160

For particulars of the visits paid to these cases see Health Visitors' Work, page 23.

ENTERIC FEVER.

There were 52 cases notified during 1926 with three deaths. During the previous 10 years the average number of cases was 26 per annum; there were, therefore, twice as many cases in 1926 as in other recent years.

The increase in the number of cases was due to a well-defined outbreak limited in time and area, which caused 22 cases with possibly 3 or 4 others.

A baker, who is 70 years of age, has a baker's shop in the area involved from which, in addition to bread, cakes, etc., a considerable quantity of freshly cooked foods (such as meat pies, a-la-mode beef, boiled ham, etc.) are sold. The business is run by the baker and his sons and other workpeople. This man had typhoid fever 40 years ago. His stools were examined on three occasions in April, 1926, but no B. Typhosus was found. There was no history of recent illness in any member of the family or of the workpeople. The cases of enteric fever showed that among the primary cases in every instance varieties of cooked food had been purchased at this shop.

The dates of onset of illness of the cases were as follows :—

April 5th	2 cases	15 cases in 7 days.
6th	5 ,,	
7th	4 ,,	
10th	2 ,,	
12th	2 ,,	
14th	1 case	
15th	1 ,,	
17th	1 ,,	
18th	2 cases	
19th	1 case	
26th	1 ,,	

The earlier of these cases were notified as Encephalitis Lethargica and were diagnosed by Dr. Davison at a consultation with the practitioner. Nearly all subsequent cases were found out through investigation by the Public Health Department. The organism producing the cases was Bacillus Typhosus. Several of the late cases were undoubtedly infected from the earlier ones.

The most careful tabulation of the foods purchased failed to reveal any one article as that concerned in the spread of the disease.

The baker mentioned above had a son aged 27 years who was mentally afflicted. This son lived in lodgings at a house about 30 yards distant from the shop. He attended daily at the shop, and did odd jobs and ran messages. He was found dead at his lodgings on May 8th. The certified cause of death was Influenza and Pneumonia. After burial it was ascertained that he had had bleeding from the rectum, and had been unwell for some time. He had been attended by a doctor, but by reason of the man's mentality the doctor could not make a definite diagnosis. When this outbreak commenced a letter was sent to all the doctors practising in the area asking for information in regard to any suspicious case, but this gave no further cases.

In the other 30 cases occurring during 1926, no connection was traced. Apparently the source of infection must have been different in each case.

SMALLPOX.

During 1926 there were 10,205 cases of smallpox notified in England and Wales, mostly of a mild type and in colliery districts. The nearest area to Birmingham involved was the town of Derby. No case of the disease occurred in Birmingham, notwithstanding the fact that several patients passed through the City in what was considered to be an infectious condition.

Smallpox Hospital Accommodation.

The excellent accommodation at Witton has been seriously affected by the erection of large numbers of new dwellings within a short distance of the hospital. This will probably not interfere with its use for cases of modified smallpox, but undoubtedly it is now unsuited for the treatment of acute cases of the disease in large numbers. Steps are being taken with a view to obtaining another site for a smallpox hospital.

VACCINATION.

The following are the vaccination statistics for the year ending December 31st, 1925.

Births returned	18,215		
Conscientious objections	3,272,	or 18.0 per cent.	of total.
Died unvaccinated	1,072		
Successfully vaccinated	11,333,	or 66.0 per cent.	of survivors.
Insusceptible	121,	or 0.7 ,,	,,
Postponed by medical certificate	163,	or 1.0 ,,	,,
Removed to other districts	510,	or 3.0 ,,	,,
Lost sight of	433,	or 2.5 ,,	,,
Still under notice	1,311,	or 7.6 ,,	,,

MEASLES.

There were 78 deaths recorded from this disease during 1926, giving a death-rate of .08 per 1,000. This is one of the lowest death-rates on record for this disease. The number of cases of Measles and German Measles together with the mortality rates for the years 1907-1926 are set out below :—

	CASES.		DEATHS.		Death-Rate (Measles only).
	Measles.	German Measles.	Measles.	German Measles.	
1907	?	?	409	?	.51
1908	?	?	70	?	.08
1909	?	?	676	?	.82
1910	?	?	42	?	.05
1911	?	?	395	?	.47
1912	7,693*	1,088*	571	3	.67
1913	3,661*	85*	398	1	.46
1914	4,612*	61*	310	—	.35
1915	8,144*	680*	420	—	.47
1916	10,635	4,996	101	1	.11
1917	15,516	472	333	4	.37
1918	5,413	300	71	1	.08
1919	15,158	565	189	—	.20
1920	7,144*	477*	147	2	.16
1921	4,618*	121*	153	1	.17
1922	4,147*	125*	79	0	.09
1923	7,787*	96*	186	1	.20
1924	5,969*	112*	79	0	.08
1925	11,636*	2,722*	109	1	.11
1926	6,980*	1,556*	78	0	.08

* Partial notification only through schools.

To a large extent the death-rate from Measles depends on the period of the year when the disease is prevalent and on the area involved. The death-rates last year in the different groups of wards were as follows:—

Central wards	.19
Middle ring	.06
Outer ring	.03

The ages at death are shown below:—

Under 1 year	21 deaths.
1 and under 2 years	36 ,,
2 and under 3 years	10 ,,
3 and under 4 years	8 ,,
4 and under 5 years	1 ,,
All over 5 years	2 ,,

Every known case of Measles is visited by one of the health visitors as soon as information is received. At this visit arrangements are made for the attendance of a district nurse in cases of serious illness and where the nursing arrangements are imperfect. In all other cases information is given as to the necessity of keeping the child in bed in a room which is well ventilated, and at the same time attending to various nursing matters. Children ought not to die of Measles if the cases are diagnosed early, and proper nursing attention is given.

SCARLET FEVER.

From the appended table it will be seen that the death-rate from scarlet fever during 1926 was .01 per 1,000, equal to the lowest rate yet recorded in the City. The number of new cases notified was 1,709, so that both in number and severity the cases of scarlet fever showed a very low record in 1926.

	Number of Cases.	Case-rate per 1,000.	Number of Deaths.	Death-rate per 1,000.	Case mortality per cent.
1901-05 ...	4,038	5.21	172	.22	4.26
1906-10 ...	3,956	4.83	116	.14	2.93
1911-15 ...	5,456	6.29	125	.14	2.29
1916-20 ...	2,472	2.73	41	.04	1.66
1921-25 ...	2,652	2.84	32	.03	1.21
1917 ...	1,143	1.27	12	.01	1.05
1918 ...	1,035	1.19	11	.01	1.06
1919 ...	2,821	3.05	45	.05	1.60
1920 ...	5,563	6.13	110	.12	1.98
1921 ...	3,320	3.62	40	.04	1.20
1922 ...	3,250	3.51	36	.04	1.11
1923 ...	2,619	2.81	39	.04	1.49
1924 ...	2,219	2.31	23	.02	1.04
1925 ...	1,852	1.95	22	.02	1.19
1926 ...	1,709	1.78	8	.01	0.47

The disease is remarkable in that it is not a respecter of persons. Usually it may be said to be evenly spread over the City. Last year the incidence was as follows :—

Central Wards	1.48 cases per 1,000 of population.
Middle Ring	1.70 ,, ,,
Outer Ring	1.84 ,, ,,

During the year 1,772 persons were notified as suffering from Scarlet Fever; and of these, 1,041 were admitted to hospital, and 731 treated at home.

Among the cases admitted to hospital were 81 which proved not to be Scarlet Fever, and among those kept at home 6 proved not to be Scarlet Fever; while 24 patients admitted to hospital as Diphtheria were found to be really suffering from Scarlet Fever.

These revisions leave a total of 1,709 actual cases of Scarlet Fever, 984 of whom were treated in hospital, and 725 in their homes.

Return Cases.

During the year 37 Return Cases were reported following the discharge from hospital or release from home isolation of 34 infecting cases.

The details are as follows :—

	No. of infecting cases discharged.	No. of infecting cases, each followed by—		Total No. of Return cases.
		One Return Case.	Two Return cases.	
Hospital cases.	30	27	3	33
Home. cases.	4	4	—	4

Dr. E. H. R. Harries' report on Scarlet Fever cases in the City Hospital will be found on page 59.

WHOOPING COUGH.

There were 128 deaths due to whooping cough in 1926. This number is 65 fewer than the average in the preceding ten years.

The ages at death were as follows :—

	1922.	1923.	1924.	1925.	1926.
Under 1 year	147	17	78	94	61
Between 1 and 2 years	135	16	65	83	42
,, 2 ,, 3 ,, ...	46	6	23	23	9
,, 3 ,, 4 ,, ...	16	3	10	9	6
,, 4 ,, 5 ,, ...	5	1	6	9	2
Over 5 years	7	1	3	4	8
Totals	356	44	185	222	128

From the above it will be seen that 103 of the 128 deaths occurred among babies under two years of age.

The cases are more fatal in the poorer areas, as will be seen from the death-rates below:—

Central Wards	.19 per 1,000
Middle Ring	.14 ,,
Outer Ring	.08 ,,

As in the case of Measles so with Whooping Cough the damage done is not confined to the fatal cases, for much permanent ill-health or illness follows the disease and may injure the patient's health for many years.

Every case reported is visited with a view to supplying a district nurse at the expense of the Public Health Department, if necessary, and giving advice in regard to what is needful to prevent complications.

To a very large extent ignorance of nursing needs is the cause of serious illness or death in the cases of Whooping Cough.

DIPHTHERIA.

Birmingham has suffered acutely from Diphtheria for seven years as will be seen from the next table. It would seem to have become endemic here for the incidence has varied but little during these seven years :—

Diphtheria Cases and Deaths.

	Cases Notified.	Case-rate per 1,000 of Population.	Deaths.	Death-rate per 1,000.	Case Mortality per cent.
1901-05	991	1.28	159	.20	16
1906-10	1,210	1.48	149	.18	12
1911-15	1,125	1.30	155	.18	14
1916-20	1,065	1.19	143	.16	13
1921-25	1,651	1.76	109	.12	7
1917	770	.86	112	.13	15
1918	881	1.02	160	.18	18
1919	970	1.05	126	.14	13
1920	1,755	1.93	201	.22	11
1921	1,652	1.80	120	.13	7
1922	1,285	1.39	89	.10	7
1923	1,537	1.65	139	.15	9
1924	1,887	1.97	100	.10	5
1925	1,896	2.00	95	.10	5
1926	1,804	1.88	116	.12	6

The distribution over the City is indicated in the table below. From this it will be seen that the cases last year are more numerous in the central and middle ring of wards :—

	Ward.	Diphtheria. Case-rates per 1,000	
Central Wards	St. Paul's	3.30	Average 2.08
	St. Mary's	2.20	
	Duddeston and Nechells	1.38	
	St. Bartholomew's	1.46	
	St. Martin's and Deritend	2.21	
	Market Hall	0.87	
	Ladywood	3.14	
Middle Ring	Lozells	1.65	Average 2.27
	Aston	1.45	
	Washwood Heath	2.05	
	Saltley	2.75	
	Small Heath	2.39	
	Sparkbrook	2.62	
	Balsall Heath	1.30	
	Edgbaston	1.96	
	Rotton Park	2.45	
	All Saints'	4.05	
Outer Ring	Soho	0.82	Average 1.05
	Sandwell	1.05	
	Handsworth	0.89	
	Erdington North	1.19	
	Erdington South	0.65	
	Yardley	1.71	
	Acocks Green	0.96	
	Sparkhill	1.08	
	Moseley and King's Heath	0.98	
	Selly Oak	0.72	
	King's Norton	0.99	
	Northfield	0.94	
	Harborne	1.72	
	Whole City	1.88	

Age Incidence.

Ages.	Cases Notified.	Deaths Registered.	Case Mortality per cent.
Under 1 year	28	4	14
Between 1 and 2 years	73	10	14
Between 2 and 3 years	91	11	12
Between 3 and 4 years	131	7	5
Between 4 and 5 years	141	15	11
Between 5 and 10 years	677	52	8
Between 10 and 15 years	274	12	4
Between 15 and 20 years	141	1	1
20 years and over	248	4	2
Total	1,804	116	6

Of the 1,804 notified cases, 1,487 were admitted to the Infectious Diseases Hospital. The result of treatment of these patients will be found in the report of Dr. Harries on page 59.

Revision of Diagnosis.

An increasing difficulty arises from the large number of cases of Diphtheria which are diagnosed by means of the results of a swab taken from the throat. In many cases the child is well and the swab has been taken because the child has been in contact with a case of Diphtheria. In most of these cases the child is removed to hospital, is carefully examined there and if found to be free from any clinical sign or symptom is discharged. The result of this procedure has not given rise to the spread of the disease.

During the year 2,308 cases were notified as suffering from Diphtheria and of these, 1,976 were removed to hospital, and 332 kept at home. Of those removed to hospital, 490 were found to be not true Diphtheria, while 1 case admitted as Scarlet Fever was revised to Diphtheria. Among those kept at home, 15 were afterwards found to be not Diphtheria.

The total number of actual cases for the year was therefore 1,804, of whom 1,487 were treated in hospital, and 317 at home.

Return Cases.

During the year 61 cases occurred, following the discharge from hospital, or release from home isolation of 40 infecting cases.

The details are as follows :—

	No. of infecting cases discharged.	No. of infecting cases each followed by—				Total No. of Return Cases
		One ReturnCase	Two Return Cases	Three Return Cases	Four Return Cases	
Hospital cases	38	26	6	4	2	58
Home cases	2	1	1	—	—	3

Diphtheria antitoxin is distributed free of charge to doctors for the treatment of Birmingham patients from the following places :—

The Bacteriological Laboratory, Lodge Road ; The Public Health Department, Congreve Street and Police Stations at Bristol Road, Northfield ; High Street, Selly Oak ; Pershore Road, Stirchley ; High Street, King's Heath ; Stratford Road, Sparkhill ; Yardley Road, Acocks Green ; Coventry Road, Hay Mills ; Victoria Road, Stechford ; Washwood Heath ; Wilton Road, Erdington ; Victoria Road, Aston ; Thornhill Road, Handsworth ; Holyhead Road, Handsworth.

The total cost of Diphtheria antitoxin for the financial year ending March 31st, 1927, was :—

Antitoxin used at City Hospital	£2,053 0 0
Antitoxin supplied to doctors	£420 0 0

IMMUNISATION OF CHILDREN AGAINST DIPHTHERIA.

(Report by Dr. E. H. R. Harries and Dr. D. K. Jeyes).

By means of the Schick test, which discriminates between those who are immune and those who are not immune to an attack of clinical diphtheria, and of immunisation by toxoid-antitoxin of the non-immunes, diphtheria has been practically abolished as a cause of sickness amongst the nursing and domestic staffs of the City Hospitals. No completely immunised nurse or maid—i.e., Schick negative reactor—has contracted clinical diphtheria.

The Public Health Committee, satisfied as to the value and complete safety of the measures applied to the staffs of the City Hospitals, decided to provide free facilities for the protection against diphtheria of anyone who might desire such protection either for themselves, or their children.

Except in the case of adults who are constantly exposed to infection, as happens in Infectious Diseases Hospitals, protection is most to be desired for children whether amongst the general population of the City or in children's residential institutions. The majority of young children are susceptible to diphtheria, and it is, of course, amongst very young children that the most severe and fatal cases occur.

The protection of children was commenced in the autumn of 1925 in certain residential institutions which had experienced outbreaks of diphtheria, and so far the original inmates of 6 such institutions and all subsequent entrants (the testing and immunisation of new entrants at stated intervals is most important) have been tested for susceptibility to diphtheria and immunised where this was shewn to be necessary.

In two of these institutions the children were by request of the Authorities also tested for their susceptibility to scarlet fever by means of the Dick test. The susceptible children were actively immunised with multiple skin test doses of scarlet fever toxin.

In April, 1926, a special clinic primarily intended for children of pre-school age was instituted in the Public Health Department. A little later a second clinic was opened at Little Bromwich Hospital to meet the convenience of parents living in the neighbourhood of the hospital.

In the case of institutions testing and immunisation has always been carried out at the desire of the authorities. Propaganda work has been undertaken by the Department of Child Welfare; Medical Officers and Visitors attached to the Department have given lectures and talks to the mothers at the Welfare Centres. These talks have been followed up by calls at houses in districts where diphtheria has been prevalent. The response on the part of parents has been very good indeed. Appointments for the attendance of children at the clinic are made by the Child Welfare Department which also secures their attendance, wherever possible, for a confirmatory Schick test.

In the residential institutions a primary Schick test has always been carried out since very few children in these institutions are in the youngest age groups. At the Clinics, however, the primary Schick test has been omitted in the case of children under 6 years of age—since the majority of children below this age are known to be susceptible to diphtheria, and therefore to require protection by immunisation.

In the case of children who have to be brought by their parents to the Clinic, it is important too, to reduce to a minimum the number of attendances each child has to make. Wherever possible the confirmatory Schick test to verify the fact of immunisation has been performed.

Up to the end of 1926 the numbers of children dealt with were as follows:—

I.—Residential Institutions :—		
Schick tests ...	849	
Schick positive ...	390	
Immunised ... (to end of 1926)		336
II.—Clinics.		
(a) Children of pre-school age immunised without preliminary test ...		415
(b) Children of school age—		
Schick tests ...	400	
Immunised ...		348
Total children immunised to end of 1926		1099

Since the end of the year the numbers have steadily increased. The original one Session weekly at the Public Health Department has been increased to three with an average attendance of some 60 children at each clinic. Special attention has been given by Infant Welfare Visitors to specific districts where diphtheria has been prevalent and their efforts have been very successful in securing the attendance of mothers and young children. At the same time considerable numbers of children of school age have been brought, and to meet the convenience of these children, two clinics a week have commenced work after school hours.

At the time of writing the number of children in residential institutions and at the clinics, who have either been completely immunised, or who are in course of being immunised, is approximately 2,000.

No case of clinical diphtheria has yet occurred in a completely immunised child whether in an institution or amongst those attending the clinics.

Considerable numbers of children attending the clinics have also, by request of the parents, been actively immunised against scarlet fever. Experience as to the duration of active immunity to scarlet fever is not as yet very great.

Sufficient time has not yet elapsed since the introduction of this method to write definitely upon the point.

It may perhaps be desirable to state that (1) the tests for susceptibility to diphtheria and scarlet fever (the Schick and Dick tests) and the immunisation processes employed in either disease are completely harmless. (2) Reactions in children following immunising injections very rarely occur. When they do occur the reactions are local and of a trifling character only. (3) Whereas active immunity to scarlet fever—as shown by the reversal of the Dick reaction—can be produced within a month, active immunisation to diphtheria is a much slower process. The time taken to immunise a susceptible child will obviously depend to a considerable extent upon the original degree of partial immunity which the child possessed. Children do not, of course, start level in this matter. Some children will thus become immune after the stimulation of toxoid antitoxin injections in a few weeks; others will take 3, 6 or 9 months for the production of sufficient antitoxin in the tissues to convert the original Schick positive reactor into a Schick negative one. Experience has shown that although some children become immune much sooner than others, it is wiser to select a somewhat long interval—at least 6 months—before getting immunised children to attend at the clinics for a confirmatory Schick test.

INFLUENZA.

The position of this disease as compared with former years is shown in the tables following:

	Deaths.	Rate per 1,000.
1901-05	102	.13
1906-10	150	.18
1911-15	115	.13
1916-20	780	.88
1921-25	317	.34
1917	98	.11
1918	2172	2.50
1919	1062	1.15
1920	421	.46
1921	134	.15
1922	442	.48
1923	264	.28
1924	375	.39
1925	370	.39
1926	260	.27

In the next table the ages at death are set out for 1926 and the four preceding years. It will be noted that the disease is most fatal at ages over 35 years.

The ages at death were as follows:—

Ages	1922.	1923.	1924.	1925.	1926.	Total.
0—5 ...	29	18	22	19	13	101
5—10 ...	3	1	4	5	0	13
10—15 ...	3	5	4	5	2	19
15—20 ...	14	8	9	8	1	40
20—25 ...	13	7	5	11	8	44
25—35 ...	47	13	30	18	26	134
35—45 ...	53	29	47	41	40	210
45—55 ...	74	39	64	60	40	277
55—65 ...	76	42	64	79	50	311
65—75 ...	78	64	70	78	46	336
75—85 ...	45	33	44	38	25	185
85 upwards	7	5	12	8	9	41
Totals	442	264	375	370	260	1711

CITY BACTERIOLOGICAL LABORATORY.

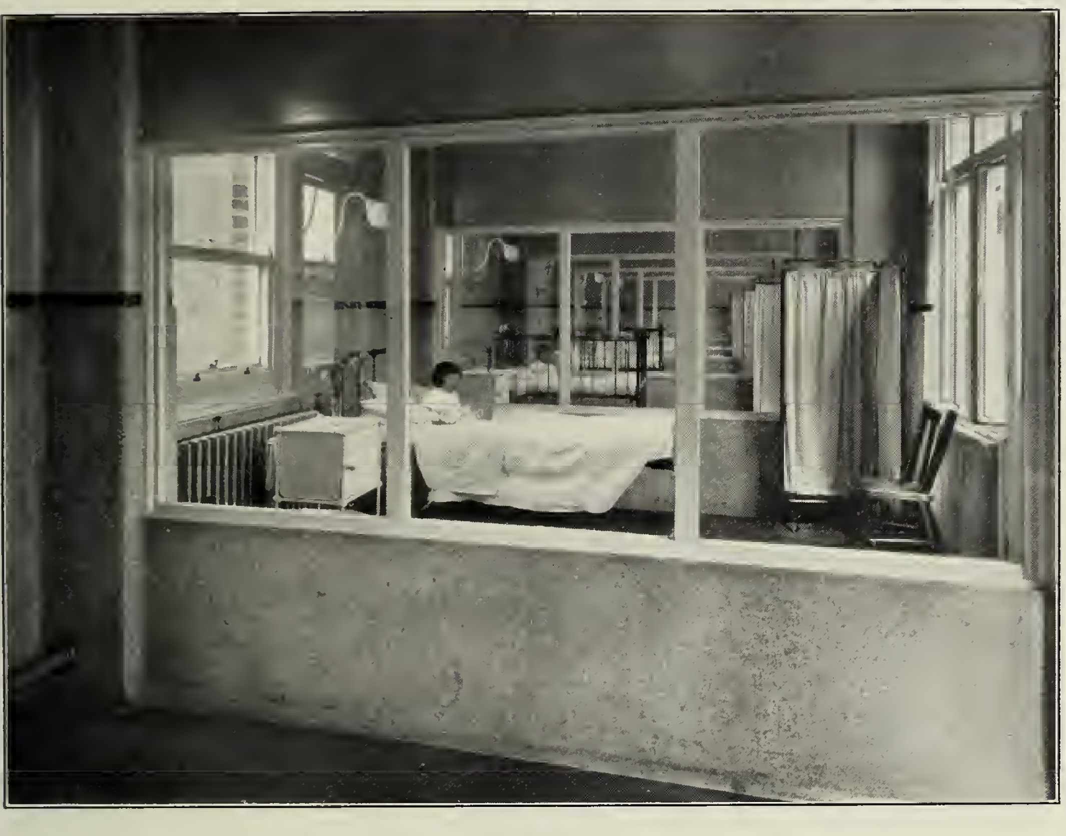
The Laboratory is in charge of Dr. H. G. M. Henry as Director, with Dr. F. C. Lewis as Assistant.

The following return of work done at the Laboratory has been prepared by Dr. Henry and shows statistically the scope and nature of the work done.

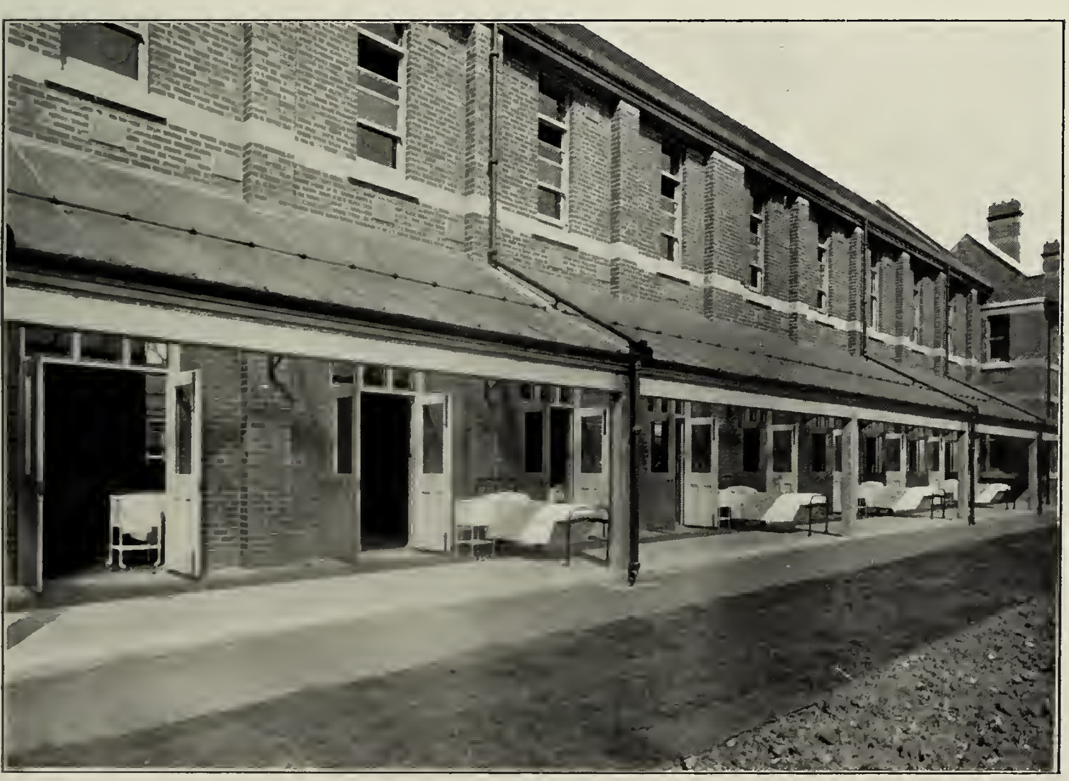
Diphtheria swabs	12,489
Sputum for tubercle bacilli	2,581
Examinations in connection with venereal diseases	13,038
Milks, bacteriological examinations	2,444
Waters ,, ,, ...	229
Shell fish ,, ,, ...	96
Widal reaction for enteric fever	57
Faeces examinations	46
Miscellaneous examinations	206
Total	31,186

The cost of the Laboratory has been as follows:—

	Total samples examined.	Cost of the Laboratory.	Cost per sample.
1921	8,172	£2,756 16 0	6/9
1922	6,107	£2,643 6 2	8/8
1923	9,526	£3,119 5 4	6/7
1924	13,049	£3,108 18 11	4/9
1925	40,589	£4,213 16 2	2/1
1926	31,186	£4,277 14 7	2/9



Cubicle (Fig. 1).



Verandah (Fig. 2).

CITY HOSPITALS.

The following statement shows the cases dealt with during the 52 weeks which constitute the statistical year:—

Scarlet Fever.

	1926.	1925.	1924.	1923.
Under treatment at beginning of year	208	237	264	309
Admitted during year	1,059	1,474	1,675	1,801
Discharged	1,107	1,482	1,674	1,806
Died	13	21	28	40
Remaining at end of year	147	208	237	264

Diphtheria.

	1926.	1925.	1924.	1923.
Under treatment at beginning of year	239	358	198	211
Admitted during year	2,000	1,986	1,766	1,401
Discharged	1,868	2,007	1,510	1,294
Died	108	98	96	120
Remaining at end of year	263	239	358	198

Note.—These figures include a certain number of cases in which the diagnosis was revised in hospital.

REPORT ON THE CITY HOSPITALS.

(By Dr. E. H. R. Harries, Medical Superintendent).

I beg to report upon the work of the City Hospitals for the calendar year ending December 31st, 1926. Two hospitals—Little Bromwich and Lodge Road—have been in use during the year. The City Hospital, Witton, has not been employed for hospital purposes, and it has been unnecessary to make provision during the year for cases of Small Pox.

Towards the end of 1925, the old wards, H., I. and J. at Little Bromwich were closed for the reception of patients. I. Ward was demolished, and H. and J. wards, which have been employed temporarily as a lecture room for nurses, and as a bedstead store respectively, are now in course of demolition.

Two new cubicle blocks (R. and S.) have been constructed in line with the existing isolation blocks, X. and Y. Each new block, which is self-contained, and fitted with the most recent type of appliances, accommodates twelve patients in separate small wards—six on each side of a central duty room. Since one wall of each small ward is practically all of glass, a full view of all the patients can be obtained through the observation windows of the duty room. (Fig. 1).

These 24 cubicles—or more accurately, single-bedded wards, since each is completely walled off from the next—constitute a most valuable addition to the isolation accommodation of the hospital.

A new two-storied ward block (replacing the old H. Ward) is also ready for occupation.

Each floor accommodates 20 patients in the main ward and allows of ample spacing between the beds.

As an annexe to the main ward in each storey are 3 small wards, with separate bath and sanitary accommodation. Two of these wards are designed to hold two patients each, and the third is a single bedded ward. These small wards constitute a further important addition to the available isolation accommodation.

The whole block is designed to accommodate 50 patients, 25 on each floor. An entirely separate entrance is provided for the lower and upper wards.

The southern aspect of the ground floor main ward is provided with a spacious verandah. Nine pairs of long glass doors open out from the ward direct on to the verandah. A special type of wheeled bedstead has been provided for this ward so that the fullest possible use may be made of the verandah in the open air nursing of the patients (Fig. 2).

The ground is being cleared for the erection of two similar blocks. The three new blocks will thus replace the old H., I. and J. Wards.

During the period of reconstruction, the restricted accommodation at Little Bromwich has been almost entirely reserved for the reception of cases of diphtheria, whilst cases of scarlet fever have, as a general rule, been accommodated at Lodge Road Hospital.

Following are the numerical details of the cases admitted to the two Hospitals:—

Scarlet Fever.

	Little Bromwich.		Lodge Road.	
Remaining on Dec. 31st, 1925	5		197	
Direct admissions during 1926	150	166	946	965
Transferred cases during 1926	16		19	
Discharged during 1926	163		1014	
Died during 1926	3		9	
Remaining on Dec. 31st, 1926	5		139	

Diphtheria.

	Little Bromwich.	Lodge Road.
Remaining on Dec. 31st, 1925	241	0
Direct admissions during 1926	1993	10
Transferred cases during 1926	0	1
Discharged during 1926	1857	10
Died during 1926	107	1
Remaining on Dec. 31st, 1926	270	0

Miscellaneous.

Remaining on Dec. 31st, 1925	0	0
Admitted during 1926	26	7
Discharged during 1926	14	6
Died during 1926	0	1
Remaining on Dec. 31st, 1926	12	0

Scarlet Fever.

The crude total of admissions with a notification of scarlet fever to both hospitals amounted to 1,131. Sixty of the cases of this total necessitated revision of diagnosis: the net number of cases of scarlet fever admitted was therefore 1,071.

The net number of deaths from scarlet fever after revision for diagnosis only amounted to 7. This gives the very low case mortality rate of 0.65 per cent.—probably one of the lowest case mortality rates on record for this disease.

The deaths are so few in number that it is possible to analyse them in detail.

Of the 7 fatal cases one, a youth of 18, was moribund from toxic scarlet fever on admission, and died 4 hours later. One was a very late case with severe myocarditis and only lived 21 hours. Two cases died of septic scarlet fever, and one from convulsions (probably uraemic) on the 18th day of disease.

The remaining two fatal cases were instances of acute scarlatinal endocarditis following upon chronic rheumatic endocarditis: the prognosis in such cases is almost invariably bad.

With the exception of the moribund case of toxic scarlet fever to which scarlet fever antitoxin was given—too late of course for any real hope of success—none of the remaining fatal cases received scarlet fever antitoxin.

Throughout the year, and particularly towards the latter part of it, scarlet fever antitoxin has been employed in an increasing number of cases.

With the prevailing mild type of the disease dramatic results can hardly be looked for, but when there has been an opportunity to employ antitoxin in the really severe toxic case, the results have been (with the exception of the moribund case noted above)—to say the least—striking.

Althought we had obtained results which appeared to justify the use of scarlet fever antitoxin in selected cases, it was realised that the use of antitoxin appreciably increased the cost of treatment of the case. It seemed desirable, therefore, to devise a test which would eliminate the element of selection. Therefore, towards the end of 1926 and in the earlier weeks of 1927, it was arranged that an alternate series of cases should be compared. Every alternate admission of genuine scarlet fever up to a total of 200 received scarlet fever antitoxin. This resulted in records being obtained of 200 consecutive admissions of scarlet fever in the acute phase: 100 of these received scarlet fever antitoxin: in the 100 comprising the alternate cases, antitoxin was withheld. In neither series was any case included which on admission was later than 5th day of disease: that is, no late or desquamating cases were included in the series.

The types of case in both series varied on admission from the mild to the moderately severe with a few very severe cases. There was no instance in either series of a true hypertoxic or "malignant" case of scarlet fever. One fatality occurred in the non-serum treated series.

Of the 100 cases treated with scarlet fever antitoxin, 84 received "concentrated" serum in an average dose of 12 c.c. The remaining 16 received "unconcentrated" serum in an average dose of 25 c.c.

The age distribution of the cases in the two groups is shown in the following table:—

Table 1.

Age Groups. Years.	100 cases NOT treated with S.F. Antitoxin.	100 cases TREATED with S.F. Antitoxin.
0—5	18 ...	23
5—10	46 ...	39
10—15	28 ...	23
15—20	4 ...	8
20—25	2 ...	2
25—30	2 ...	5
Total ...	100	100

Complications occurring in each series are set out in Table II.

Table II.

Type of Complications.	No. S. F. Antitoxin.	S. F. Antitoxin
Acute nephritis (died from uræmia)	1	—
Acute nephritis and cervical adenitis	1	—
Albuminuria	2	—
Albuminuria and adenitis	—	2
Endocarditis (severe)	1	—
Arthritis (transient)	—	2
Arthritis and cervical adenitis	—	1
Suppurative adenitis and relapse of disease in 6th week	1	—
Otitis media (mastoid 1)	9	2
Total	15	7

It will be seen that the total cases presenting complications in the series treated with scarlet fever anti-toxin was only half the number of those occurring in the series untreated with antitoxin, and further, that the complications in the serum treated cases were much less severe in character.

This series of cases is suggestive only. It is too short to eliminate the possibility of accidental sampling. The difference between the incidence of complications in the two series of 100 cases can be shown to be statistically not "significant."

Case mortality from scarlet fever has been steadily declining for a number of years, and is now very low indeed, but as shown in the series of 200 cases described above, the present type of the disease, mild as it is in the majority of cases in the initial stages, is still capable of giving rise to an appreciable amount of late morbidity: some of the manifestations of the late syndrome result in permanent damage.

Any remedy, therefore, which promises to decrease the sum total of complications should be employed. But apart from the diminution of complications, which is a matter at present of impression only, there is a general speeding up of progress towards convalescence of the serum treated case: rapid subsidence of temperature and pulse rate and neutralisation of general toxæmia with fading of the rash may be looked for with confidence. There is a lessening in the amount of desquamation—in fact, when serum has been given early, frequently no appreciable desquamation appears at all. Although many serum treated cases appear to be ready for discharge from hospital in three weeks from onset, some recent American work has shown that in the majority of cases of scarlet fever the specific hæmolytic streptococcus can be demonstrated in the throat at the end of this period. Hence it would seem inadvisable to discharge such cases at an earlier period than has been adopted in these hospitals for some years in the mild uncomplicated case untreated with serum—viz., 30 days from onset. The use of serum would appear to bring more cases into the category of the "uncomplicated," and if this be so, its use will, in the long run, diminish the average days stay of scarlet fever cases in hospital.

Serum sickness which, with the early and largely experimental batches of unconcentrated serum, was rather a formidable sequel, has, with the use of concentrated sera, diminished very greatly.

In a consecutive series of 84 cases treated with concentrated serum (average dose, 12 c.c.), only 17 developed serum phenomena, and only 3 of these were at all severe.

Before leaving the subject of scarlet fever antitoxin, it should be added that the production of passive immunity by its means is now a routine measure in the City Hospitals. With the occurrence of a case of scarlet fever in a non-scarlet fever ward, the ward population is Dick tested, and the non-immunes protected by usually 5 c.c.'s of scarlet fever antitoxin. These measures enable the situation to be very quickly brought under control. During the year we were able to stop spread of scarlet fever in a children's residential institution by these methods, and on more than one occasion the method has been successfully employed in a large general hospital ward in the city, in circumstances where the spread of scarlet fever to patients severely ill from other diseases might have proved disastrous to them. Two years' experience in the use of scarlet fever antitoxin has demonstrated beyond all reasonable doubt that it is a most valuable agent in the treatment and prophylaxis of scarlet fever. Its extended use by the general practitioner is capable of simplifying to a very great extent the management of cases of scarlet fever treated in their own homes.

During the year a large amount of work has been carried out by Mr. Brayshaw Gilhespy, the Otologist to the Hospitals. Mr. Gilhespy has made a careful survey of the work so far carried out in otitis media, and the results obtained are considered in detail in a separate report (p. 64). In this report are set out his considered conclusions as to the most appropriate method of treatment of the ear actually damaged by associated nasopharyngeal sepsis occurring during the course of an attack of scarlet fever. The importance of rational surgical treatment of the unhealthy nasopharynx for the cure of otitis media is clearly brought out.

At the beginning of 1926, an extension of Mr. Gilhespy's work in the scarlet fever wards was agreed upon. It was decided that so far as was feasible, having regard to limitation of facilities for an increased amount of operative work, that the nasopharynx of those children in whom it was obviously unhealthy should also be surgically dealt with. The primary object in view was a possible reduction in the "return case" rate. I found as a result of a careful analysis of cases which after discharge had given rise to return cases, that in case after case the discharged patient who had acted as a convalescent carrier had been noted, when in hospital, to have enlarged or unhealthy tonsils and/or adenoids. Otorrhœa had clearly been shown to be primarily the result of an unhealthy nasopharynx, and it appeared probable that not only would surgical treatment prevent an otitis media developing after discharge from hospital, but would reduce the number of "return cases." If children, so far as possible, ceased to leave hospital with large tonsils and adenoids, which probably still harboured the specific hæmolytic streptococcus, then they would be, at any rate, less likely to give rise to "return cases."

The results of the first year's experience have been sufficiently encouraging to warrant the continuation, and if feasible, an extension of this policy. It should be said that considerable encouragement was given to its initiation by the extraordinarily good results which were being obtained in the clearance of convalescent carriers of diphtheria bacilli of proved virulence by surgical means. (A note on this work appears below).

Of 105 consecutive cases of convalescent scarlet fever operated on by Mr. Gilhespy, of which 33 were for otitis, and 72 for the removal of tonsils and/or adenoids, which were obviously enlarged or unhealthy (without evidence of otitis media) only one patient is known to have given rise after discharge from hospital to a return case. This patient, a girl of 13, was removed from hospital against advice, and on the parents' responsibility because she still had a slight watery nasal discharge. She infected her brother with scarlet fever a fortnight after leaving hospital. Probably had the parents allowed her to remain until the nose had become dry, this return case would not have occurred. The release of 42 cases not operated upon, is said to have caused return cases after discharge from hospital. An analysis of these infecting cases shows that 17 were noted to have an unhealthy or abnormal condition of the naso-pharynx while under treatment for scarlet fever.

It should be added that 5 out of the total of 72 convalescent scarlet fever cases operated on for tonsils and adenoids were also known to be carriers f virulent diphtheria bacilli. Bacteriological clearance was obtained as in the pure diphtheria series noted elow. None of these cases gave rise to "returns" either of scarlet fever or diphtheria.

DIPHTHERIA.

The gross total of cases admitted with a diagnosis of diphtheria reached the very high total of 2,003.

Revision of diagnosis was necessary in no less than 465 of these admissions. When deduction has been made for these revisions, the number of admissions of cases which in the opinion of the Medical Officers were suffering from clinical diphtheria becomes 1,538. Of this total, 92 died of the disease. This gives a case mortality rate of practically 6 per cent.

A considerable number of these fatal cases arrived at the hospital in a hopeless, or virtually hopeless condition as the following analysis shows:—

NUMBER OF FATAL CASES OF DIPHTHERIA WHICH SURVIVED:—

Group 1			Group 2			Group 3
Less than 12 hours	Less than 24 hours	Less than 48 hours	Less than 3 days	Less than 4 days	Less than 5 days	5 days and over
6	16	7	15	6	7	35
Total 29			Total 28			Total 35

These cases may be further analysed as follows—

Group	No. of cases	Percentage of fatal cases	Swab before admission.	Antitoxin before admission.	Average day of disease on adm. to hospital
1	29	31.5%	6	5	4.7
2	28	30.5%	5	3	4.4
3	35	38%	6	4	3.6

It will be noted that whereas 17 (or 18%) of these fatal cases had been swabbed before admission, and were not notified for removal to hospital until the bacteriological report was received, only 12 of the 92 fatal cases (13%) had received antitoxin before admission to hospital. The largest doses of antitoxin given were 16,000 units in two cases, both of these being removed from another hospital.

On the other hand, of the 465 revisions of diagnosis, a very large percentage consisted of cases which had been sent in on the result of a more or less speculative swabbing without any apparent evidence of disease.

As in previous years, such cases were practically all submitted to the Schick test on entry. The swab was also repeated and in a large number of cases a report was requested from the City Bacteriologist as to whether the organisms, if present, were toxic or not.

A recent series of 187 consecutive admissions for diphtheria is analysed below.

No swab before admission	71	Clinical diphtheria	52
		No evidence	19
Positive swab before admission ...	116	Clinical diphtheria	58
		No evidence	58

Swabs were repeated from nose and throat immediately after admission to hospital, and virulence tests were requested of the organisms recovered from the 58 cases which had been swabbed before admission with positive results, but in whom no evidence of clinical diphtheria could be discovered at the hospital.

The results were as follows:—

Throat swab toxic, Nasal swab non-toxic	5
Throat swab non-toxic, Nasal swab toxic	3
Throat swabs and/or nasal swabs non-toxic organisms ... ... (No toxic organisms in either throat or nose).	38
No diphtheria bacilli found (toxic or non-toxic) in nose or throat ...	12
	58

It will be seen, therefore, that a report based upon the morphological examination of a culture from a swab not only does not mean that the patient necessarily has diphtheria (as shown by the Schick test he is frequently immune), but in a considerable number of cases is only evidence that at the time of the first swab the individual was carrying harmless organisms.

The patient who, after a recent attack of clinical diphtheria, continues to carry diphtheria bacilli is, however, in a different category. As might be expected, the organisms present in the *throat*, at any rate, of the convalescent carrier, are practically always virulent. Fortunately in the majority of cases, bacteriological clearance, or apparent bacteriological clearance, as evidenced by two consecutive sets of negative swabs from nose and throat, is obtained by the time that the patient is clinically fit for discharge from hospital. In our experience the persistent carrier is nearly always the possessor of enlarged or unhealthy tonsils and/or adenoids.

Encouraged by the marked success which had attended surgical intervention in the case of the obstinate carrier of virulent organisms during 1925, Mr. Gilhespy and I agreed that tonsillectomy should be done on a larger number of cases during 1926. In 1926, 78 convalescent carriers of diphtheria bacilli of proved toxicity were operated upon. Fifty-nine of these cases had both tonsils and adenoids removed. In 6 further cases, tonsils only were removed, and in 13, adenoids only. With a few exceptions, in which dissection of small buried tonsils was undertaken, enucleation was the operation performed. Sixty-six of the total of 78 cases gave a first negative swab approximately a week after operation : a second swab on the average a week later was also negative. These patients were all discharged on the receipt of the second negative swab from nose and throat. Twelve of the total did not clear on a first swab. Of these, 2 returned positive swabs from nose and throat and 10 returned positive swabs from the nose only. The organisms present in the above 2 cases were re-tested for virulence and both were returned as avirulent.

Of the 10 positive nasal swabs—4 were reported virulent, 6 were not re-tested for virulence, but ultimately produced negative swabs. It will be seen that surgical means are not so successful in obtaining prompt clearance of organisms from the nose, as they are in the case of the throat. It is possible that a combination of surgical procedures and the local application of ultra-violet rays to the nasal mucosa might be more successful.

Two " return " cases are stated to have occurred as a result of the discharge of the above 78 cases. The infecting case in one instance was removed against advice, and on parents' responsibility on the father undertaking to isolate the child at home. Unfortunately this was not efficiently carried out, and the boy infected his sister. The second case is very doubtful in as much as the child's father had suffered from diphtheria, and had been treated at home throughout. Shortly after the boy's discharge from hospital, the mother was admitted. She showed no clinical evidence of diphtheria, but had received antitoxin before admission. Her swabs were negative on admission. The boy was re-admitted 20 days after the primary discharge with a report of a virulent nasal swab. Before his discharge from hospital in the first instance we had obtained two sets of negative swabs from nose and throat. There is a possibility that he had been re-infected in the home by the father, who had been there throughout.

During the same period covered by the surgically treated convalescent carriers noted above, 31 cases discharged from hospital, including the two just alluded to, were stated to have produced " return " cases. A few of these cases were admitted in 1925, and discharged in 1926, and a few who were admitted in 1926 were discharged at the beginning of 1927. Of the 38 alleged return cases produced by these 31 infecting cases, only 24 were genuine cases of diphtheria. Of the 31 alleged infecting cases, only 17 had had diphtheria in hospital—the remainder were discharged as having no evidence, save one case of genuine diphtheria which it was known was never in contact with the return case.

Basing the calculation on the admissions of clinical diphtheria for 1926—namely, 1,538, the 17 infecting cases give a return case rate of 1%. This figure of 17 includes the two cases noted above which had been operated on. Of the remaining 15, investigation shows that 4 were noted to have enlarged tonsils and adenoids when in hospital, and 1 had a nasal polypus. Two consecutive negative sets of swabs from nose and throat had been promptly obtained during convalescence from all these 14 cases, and they were therefore discharged without operation.

Tonsillectomy and the removal of adenoids would appear to be a method of great value in the clearance of the obstinate carrier of diphtheria bacilli of proved virulence. As perhaps might be expected, clearance is more readily obtained of organisms from the throat than the nose.

The large surface presented by the nasal mucosa for the lodgment and growth of diphtheria bacilli makes for difficulty in clearance by any means—surgical or otherwise.

Nevertheless, the removal of the adenoid pad must tend to cut short the supply of organisms from the post nasal space.

Although no clinical method is uniformly successful, it may be said that the rational surgical treatment of the naso-pharynx is a great advance upon the extremely unsatisfactory methods—antiseptic sprays, bacteriological dyes, and diphtheria vaccines—hitherto available for the attempted clearance of the convalescent diphtheria carrier.

There is no doubt that the chronic carrier of organisms of proved virulence is at present an important factor in the spread of infection and must be considered in quite a different category to the casual or transient carrier of harmless diphtheroids. It is important wherever possible to secure the bacteriological clearance of these chronic carriers. But important as he is in the spread of infection at the present time, he might be rendered relatively or even absolutely unimportant by the active immunisation against diphtheria of children of susceptible ages.

The chronic carrier of virulent diphtheria bacilli who is *always* himself immune to the disease can do no damage amongst a population which has also been rendered actively immune. The tragedies of the late case of diphtheria coming under treatment only when antitoxin even in the largest doses can be of no avail will then cease to occur.

Immunisation of the Nursing and Domestic Staffs.

The Schick testing on entry of all members of the nursing and domestic staffs of both hospitals, and the immunisation of the susceptibles has proceeded as in previous years, and is a matter of established routine. A detailed table was given in my report to you for 1925, showing the incidence of diphtheria amongst the staff in the years before and after the introduction of active immunisation. During 1926, a Schick positive probationer contracted diphtheria at Little Bromwich hospital soon after entry. She had been inadvertently transferred for duty from the scarlet fever wards at Lodge Road Hospital to the diphtheria wards at Little Bromwich. No members of the domestic staff contracted the disease at Little Bromwich. At Lodge Road Hospital there were no cases of diphtheria amongst the nurses, but two wardmaids, both of whom were Schick positive, and who had only recently entered the hospital, contracted diphtheria in a mild form while working in an Isolation Block which only occasionally received cases of diphtheria. In none of these three instances divided between the two hospitals, had active immunisation been commenced.

Probationers and wardmaids are now also submitted to the Dick test on entry, and those found susceptible to scarlet fever—a very small percentage—are actively immunised by a course of multiple skin test doses of Dick toxin. The numbers so far immunised are small, but it may be said that no originally Dick negative member of the staff, or one who has been rendered Dick negative by means of Dick toxin has so far contracted scarlet fever.

It is hoped to be able to deal more fully with this subject in next year's Report. Our experience shows that a Dick positive reactor amongst the staff can be converted into a Dick negative reactor in 4 to 5 weeks by the following series of skin test doses of toxin, namely, 1,000, 2,500, and 5,000. It is probable that the basal immunity of these young adults is high, and that in the course of their work in scarlet fever wards they are constantly receiving minute doses of infection which helps on the process of artificial immunisation. As a rule, the new probationer who contracts scarlet fever does so a few days after her entry to a scarlet fever ward, or not at all.

A Report on Active Immunisation against both Diphtheria in residential children's institutions and at clinics will be found on page 57.

AURAL AND NASAL COMPLICATIONS OF SCARLET FEVER.

Report by Mr. F. Brayshaw Gilhespy, D.L.O.).

The Public Health Authorities of the City of Birmingham are interested in the Aural and Nasal complications of Scarlet Fever for two reasons; in the first place otorrhœa (discharge from the ear) and nasal discharge, if persistent, confine the patient to Hospital for a longer period than if these symptoms were not present, and in the second place such patients, if discharged with these conditions still present, are a source of infection, for an unknown period after leaving Hospital, from which other members of the community may develop Scarlet Fever. It follows therefore that if the complications we are dealing with can be effectively controlled, a greater number of patients can make use of the Hospital beds available in any year. As to the infectivity of the nasal and aural discharge the view is held at our Hospitals that these discharges are infectious, but it is only fair to state that this is disputed. Certain cases mentioned in this report confirm us in our opinion that the discharges are infectious in their early stages and probably opinions now only differ as to when the discharges cease to be infective; individual cases differ in the composition of the discharge and bacteriological examination must be the final arbiter. At the present time in our Hospitals we try to live up to the high standard of sending each individual patient home with a dry ear and nose. From a wider point of view than the causes already discussed it must be remembered that the majority of Scarlet Fever patients are children and that otorrhœa arising during school years is a serious disadvantage, causing both loss of school time and often defective health and hearing.

The following table has been prepared for the purpose of showing the proportion of otorrhœa in school children which may be attributed to the exanthemata

Table Showing Causes of Otorrhœa in Elementary School Children.

					CAUSES OF OTORRHŒA				
Year	Total Cases	Onset before 1 yr. old	Measles	Scarlet Fever	Pneumonia	Whpg. Cough	Miscell.	Colds, Sore Throats	No definite history of Cause
1924 ...	182	21	23	22	2	2	15	9	88
1925 ...	183	9	27	18	2	—	9	11	107
1926 ...	252	29	28	13	2	5	33	18	124
	617	59	78	53	6	7	57	38	319

These figures have been collected by the writer from cases seen by him during the last four years, and he has taken the history in each case. The number (319) of cases in which no definite account of the cause or onset of otorrhœa could be obtained is remarkable, until one realises what little significance is paid by the parents of a large, working-class family to a running ear occurring in one of their numerous progeny.

Measles accounts for 12.6% and Scarlet Fever for 9.8% of cases of otorrhœa in early adolescence. These figures err on the low side as other cases arising from the same causes must be found in the 319 cases in which no definite history could be ascertained. It may be assumed therefore that about one in five cases of otorrhœa which has arisen in childhood is directly due to an attack of either Measles or Scarlet Fever.

Realising the extent of the problem, it has been our privilege to have dealt with the otorrhœa in its initial stages. To some observers it may appear that operations in an Infectious Hospital involve undue risk, both from the point of view that the patient has but recently recovered from an infectious Fever and, secondly, that the atmosphere of such a Hospital is not ideal for operations. With the second criticism we agree and operations are limited to as few as possible; but we have found it impossible to send out patients with dry ears and ear drums but little damaged without resorting to operative interference. Further, it must be strongly pointed out from personal experience, with which all aural surgeons will agree, that when the ear discharge from Scarlet Fever has become chronic operative treatment is frequently necessary, and then involves a severe form of operation (the Radical Mastoid), and even when this has been performed, hearing is often greatly impaired and in a good percentage the discharge is not permanently cured. By earlier and milder types of operation it has been our endeavour to prevent such cases from becoming chronic and requiring the more serious form of operation mentioned above.

Passing to the clinical side of our subject, the modern definition of Scarlet Fever is as follows (Zingher):—

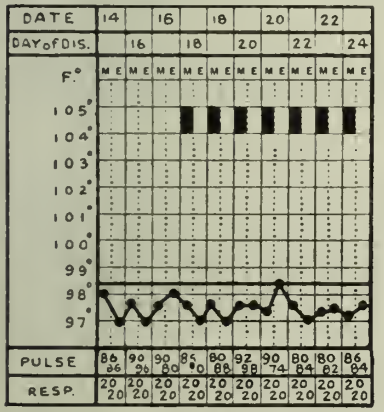
> "A local disease of the nasopharyngeal mucous membrane caused by certain specific strains of the hæmolytic streptococcus. A soluble toxin is produced locally which is absorbed into the system of the patient and gives rise to the rash and constitutional symptoms. The toxin paves the way for the secondary invasion of the system by the specific hæmolytic streptococcus and other organisms present in the bacterial flora of the nasopharyngeal cavities."

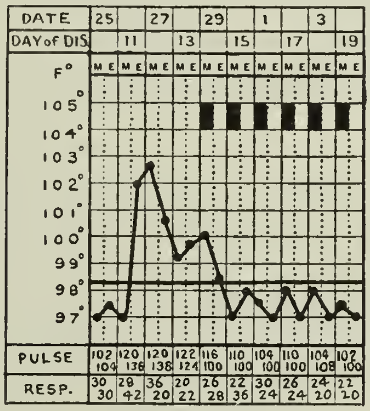
From the above description it will be realized that one is dealing with two separate entities; an initial stage of absorption of toxin characterized by the presence of a rash and constitutional symptoms, and a septic element. These two elements may be present together in the early stages of an acute septic Scarlet Fever. Generally, however, the septic complications such as otorrhœa, adenitis, etc., occur later after the toxic stage has subsided. Further, it would appear to be the current conception of Scarlet Fever that the septic complications are primarily due to infection in the nasopharynx. Harries, at Little Bromwich, teaches that a pad of septic adenoids can quite easily account for infection of the middle ears, via the Eustachian tubes, and also, by forward spread, for the rhinitis seen in the septic cases; spread downwards is a possible cause of broncho-pneumonia and adenitis can be accounted for by infection arising from the nasopharynx.

On this teaching the mildest case of Scarlet, as regards toxæmic symptoms, may later produce septic complications if possessed of an unhealthy nasopharynx. At the present moment a great deal of work is being done in Scarlet Fever on the administration of antitoxin, and in this connection it would be well to emphasize what the Dicks, who are pioneers in this field, state as their opinion of the value of antitoxin. They say: "That if given early, antitoxin removes the toxic and the subsequent course of the disease depends upon local infection of the nose and throat." On the other hand, they claimed for the administration of antitoxin in Scarlet Fever, "That if the toxic element be removed, the patient, not having the necessity to combat toxæmia, would have a much better chance to withstand septic complications arising later." Layton, working under the Metropolitan Asylums Boards, rather hopes that by the administration of antitoxin and adopting his suggestions as to the general constitutional treatment of his patients, the incidence of otorrhœa may be diminished; others, including the writer, having arrived on the field before a reliable antitoxin was in sight, have attacked the problem of otorrhœa by the removal of septic foci in the nose and throat, either as a preventive measure or in an attempt to cure the otorrhœa when it has arisen. At the present moment there are not enough figures to give an opinion as to the value of antitoxin in preventing this complication. Souper, in Aberdeen, has collected 300 cases of Scarlet Fever treated up to date by Scarlet Fever streptococcus antitoxin from which only three cases of otitis media, and these very mild, have arisen. His opinion, which is shared by the Medical Officer of Health and the Hospital Staff at Aberdeen, is that antitoxin gives promise of great value, not only in the treatment of the disease, but in the prevention of complications. My own opinion is that here we have a weapon which may diminish septic complications of Scarlet Fever in the future.

A. Type and Period of Onset of Otorrhœa.

Otorrhœa may start at any time from the first week to a late period of convalescence, such as the sixth or eighth week. As a rule the onset of discharge is preceded by a rise of temperature; this may occur 48 hours before the drum is ruptured. On the other hand, the onset may be without rise of temperature and without pain, which, however, is generally present in the class of case arising with temperature. Probably the second type is more common after the third week. The appended charts show these two types of onset.





Black oblongs denote presence of otorrhoea.

B. Age Incidence.

The age incidence of this complication is interesting, and the following table shows that 47% of admissions of cases of Scarlet Fever are between the ages of five and ten years, but the incidence of otitis in the 0—5 group is twice as high as in any other group.

Age period		Cases of Scarlet Fever	Cases of Otitis	Percentage in Age-period
0—5	...	758	117	15.4
5—10	...	1686	132	7.8
10—15	...	703	24	3.4
15—20	...	192	7	3.6
20 plus	...	245	10	4.1
		3584	290	

8.1 per cent.

C. Method of Infection.

The middle ear is secondarily infected by the Eustachian tube from the nasopharynx, and there is no definite evidence of a primary blood infection of the middle ear.

D. INFECTIVITY OF DISCHARGE.

In fever hospital practice it is assumed that the ear discharge is infective and no case, if possible, is allowed to leave the hospital with a discharging ear. The question at once arises as to when infectivity ceases.

It is impossible to lay down any hard and fast rule, but it is probable that after a few months with a heavy secondary infection of the ear discharge the Scarlet Fever streptococcus dies out. The only certain method of excluding the question of infection would be by a bacteriological examination of the discharge and the failure to find the hæmolytic streptococcus of Scarlet Fever. My own impression is that the discharge remains infective in most cases for at least three or four months.

E. FREQUENCY OF MASTOIDITIS WITH EAR DISCHARGE.

The following figures are quoted in this connection:—

Gardiner	7%
Ross	7%
Strachan	6%

It has not been shown that complications of mastoiditis such as lateral sinus thrombosis, meningitis, labyrinthitis, brain abscess, are more or less frequent than with mastoiditis occurring from otorrhœa of other origin.

F. OTITIS AS A CAUSE OF OTHER COMPLICATIONS.

Ross produces figures which show that other complications such as rheumatism, etc., are not more frequent in cases with otorrhœa than in those without.

PROPHYLACTIC TREATMENT.

A. LOCAL TO THE EAR.

It would be a counsel of perfection in a large hospital, but quite practicable in a case treated at home, that as soon as the child is well enough the ear should be gently cleaned out and syringed if cerumen were present. This would be of advantage in two directions:—

(1) That in case of a sudden rise of temperature bringing the ears under suspicion as a cause, they could be readily examined. As there is generally some desquamation in the meatus, with the presence of epithelial debris, routine removal of such would render inspection of the drum much easier.

(2) If a primary paracentesis of the drum had to be performed at any time, secondary infection of the discharge from a dirty meatus would not occur so readily.

B. LOCAL TREATMENT TO THE NOSE AND THROAT.

I do not advocate syringing of the nose. This is generally held to be bad practice, but at a meeting of the Royal Society of Medicine, Watson Williams advised a coarse nasal spray of collosal argentum.

TREATMENT OF OTORRHŒA.

The routine treatment of otorrhœa arising from Scarlet Fever does not differ from that of otitis caused by other infection. In the earlier stage, when the membrance is bulging, paracentesis should be performed. Generally one will have as a guide the presence of pain, and a raised temperature. Milligan advises paracentesis when the membrance is only congested. I cannot agree in whole with this, as I have noticed in some cases that the inflammation may be entirely limited to the superficial layers of the membrana tympani; in other words, that a myringitis only is present. Certain otologists state that a myringitis never occurs without exudate in the middle ear. If this be true paracentesis in a case of myringitis would be good treatment, but unnecessary otherwise. I have not seen enough cases of myringitis yet to say at what stage of Scarlet Fever they can be expected or whether they are intimately related to desquamation, but this class of case I have found is more common than one is led to expect by the literature—in which I cannot find it mentioned. I have found it impracticable to perform paracentesis without a general anæsthetic.

When the discharge is established and is free, as it generally is in the early stages, there is no contra-indication to gentle syringing of the meatus by the medical attendant to keep the meatus free of discharge. During this early stage the hair in the region of the ear should be cut away, and the ear covered by a small pad of gauze, secured by tapes. This can be burnt. The ear should not be blocked with cotton wool, but any discharge syringed or wiped away as often as is necessary.

REMOVAL OF TONSILS AND ADENOIDS AS A METHOD OF CURING THE EAR DISCHARGE.

At the beginning of this paper it was emphasized that the occurrence of otorrhœa was a sequence of the primary infection of the nasopharynx seen in Scarlet Fever. This would operate more easily in children of low age, as in these the Eustachian canal is relatively larger and more horizontally placed than in the adult. At this stage, also, tonsils and adenoids are at their most luxuriant period. In hospital practice the routine performance of a primary paracentesis has been found impossible owing to administrative difficulties and, therefore, it has come about that the removal of tonsils and adenoids has been adopted as a means of cutting short the otorrhœa. This can safely be done at the end of the third week of Scarlet Fever. Gardiner, in Edinburgh, was the first to carry out this form of treatment on an extensive scale, and the average length of the discharge after this operation was found to be fourteen days; as a result, the average stay in hospital of such cases had been reduced by sixteen days per case.

In my first series of 93 cases, the average duration of discharge was fifteen days. In small children in whom I did not think that the tonsils were the cause of the discharge or that their total removal with the blunt guillotine would be feasible, I removed the adenoids only, but the results were equally as good in those cases in which I had removed the tonsils also. Souper and Maclay have produced very similar results.

With regard to the cases seen in private practice, and with no difficulties placed in the way of an early paracentesis, I should imagine that in most cases this form of treatment alone would abort or materially lessen the length of this complication. In such children the teeth and tonsils and adenoids would not be found in the same unhealthy condition as in hospital patients. Failing the cessation of discharge, however, after the third or fourth week the condition of the nasopharynx should be carefully looked into.

Owing to the generosity of the Birmingham Public Health Committee, I have been able to defray the expense attached in attempting to get into touch with my first batch of patients treated on the lines already indicated. These patients were treated in 1923, and early this year (1927) a questionnaire—a specimen of which is reproduced—was sent to each patient. A small proportion have left the City, but the proportion of replies has been, I think, as satisfactory as could be expected. Second and third applications have been sent to the more tardy.

SPECIMEN OF CARD FOR QUESTIONNAIRE.

I am interested in the condition of ....ears since (s)he left the Fever Hospital in 1923.
Is your child's ear now dry?.........................
Has your child's ear run since discharge from Hospital?..................................
Which School (if any) is your child attending?................................
Please return this card when you have answered the questions.

Following my questionnaire, 106 replies were received from 127 cases, whom I had treated in 1923 for Scarlet Fever Otitis.

Thirteen patients originally reported that otorrhœa was still present in February, 1927, but when some of these cases were seen it was found that in three the ears were quite dry, and in two of these the membranes were healed; cerumen had, I think, been mistaken for aural discharge in two cases. One other case complaining of deafness was reported, but the deafness was not marked on examination.

The accompanying table gives details of the ten cases with otorrhœa present in 1927, and an analysis of these cases is worth while. In six cases it will be seen that a mastoid operation had been performed in 1923, but in three of these the mastoid trouble was not due to Scarlet Fever and they had been transferred to us after operation because of an epidemic of Scarlet Fever in the hospital in which they were operated upon. The three other cases of mastoid disease were due to Scarlet Fever, and are explained in the table. In two of the remaining four cases adenoids had been removed in 1923, but the ears had not dried.

Considering that the response to my questionnaire produced 83.6% of replies, it will be seen that the Scarlet Fever cases treated in a Fever Hospital in 1923 left but a moderate legacy of chronic otorrhœa. The following table shows the line of treatment adopted during the year 1923 in 127 cases of suppurative Otitis Media due to Scarlet Fever.

127 Cases of Suppurative Otitis Media treated in 1923.	Average duration of discharge	Result of questionaire 106 replies Moist ear 1927.
83 after "T and A" operation. ... ... (Adenoids alone removed in 38 cases)	15 days	2
20 treated in ear ward	30 days	2
13 acute cases of mastoiditis		6
3 acute cases of mastoiditis in which tonsils and adenoids had been removed some time previously		
1 acute case of mastoiditis arising soon after tonsil and adenoid operation		
3 conservative mastoid operations		
4 radical mastoid operations		
		10 moist ears.

TEN CASES WITH OTORRHŒA STILL PRESENT IN FEBRUARY, 1927.

Patient	History while in Infectious Hospital 1923	Seen February 1927
B.H.	Otorrhœa arising from previous Measles. Otorrhœa complicated by Impetigo. Sent out with otorrhœa. Adenoids removed.	Free discharge from ear.
W.W.	Otorrhœa while in Hospital.* Adenoids removed.	Ear moist in 1927. Deaf at times.
R.H. T.W.	Otorrhœa while in Hospital. No operation done in either case.	Reported wet ears, but not seen.
D.M.	Admitted with old-standing otorrhœa. Conservative mastoid operation performed.	Not seen in 1927.
F.H.	Admitted with Mastoiditis. Left Radical Mastoid operation. Right Schwartze operation.	Left dry. Right runs at times.
N.K.	Radical Mastoid operation. VIIth nerve palsy, which cleared after operation.	Not seen in 1927.
F.B. K.F. F.W.	Transferred from Ear Department of another Hospital, having had Mastoid operations performed before admission to the Infectious Hospital.	F.B. seen. Ear moist.

*Unless otherwise stated the ears were dry on discharge from Hospital.

Coming to the year 1924, 92 cases of Scarlet Fever were complicated by otorrhœa. The following table shows the line of treatment adopted in these cases and the result of the questionnaire.

		Result of questionaire 1927.
Total Cases	92	76 replies
		Moist ears 1927.
Tonsils and adenoids removed, or adenoids only	26	3
Mastoid operation performed	18	2
No operation	48	—
	92	5

An analysis of the rather large number of mastoid operations performed in this year is appended.

9 cases for acute and obvious mastoiditis, either on admission to hospital or arising during their stay. In some of these latter cases tonsil and adenoid operations had been done while in hospital.

5 cases were operated on for chronicity of discharge, with signs pointing to possible infection of the mastoid antrum, e.g., persistent profuse discharge from a posterior perforation, sagging of the meatal roof, etc.

1 recurrence in an old Schwartze mastoid.

1 done after leaving hospital.

1 case of the mastoid antrum being opened, but not found infected. The post-auricular gland was the cause of mistaken diagnosis.

1 No Notes.

18 Total

The case noted above as being operated upon after leaving hospital was seen by the author six weeks after discharge from the Fever Hospital. As the ear was discharging profusely I recommended removal of tonsils and adenoids and exploration of the antrum. At operation the mastoid antrum was full of pus. This case fully opened my eyes to the fact that an infected antrum might be the cause of chronicity in certain cases of otorrhœa not shewing obvious mastoid signs or symptoms and, in part, accounts for the five cases occurring during this year in which the mastoid was explored on account of the chronicity of discharge. On the other hand, in 1923, I explored the antrum in a child with a perforation near the umbo, in which the ear would not dry. I found a deep antrum in a non-cellular mastoid, and left the post-aural wound open. Counter-drainage in this case had no effect on the discharge, which continued. My feeling is that opening of the mastoid antrum as a means of counter-drainage is not to be recommended unless physical signs in the drum, or symptoms such as pulse, temperature or mastoid tenderness point to definite involvement of the antrum.

An analysis of the 1924 cases shews that five patients who were not operated upon for mastoid disease in 1924 have since leaving Hospital suffered from otorrhœa. In one, the ears are now dry; in another, the discharge has only recurred quite recently. In four,removal of Adenoids had been undertaken with the object of curing the discharge and with the hope that prevention of further infection of the middle ear, via the Eustachian tube, would be achieved; three of these children's ears are still discharging. The tonsils in these cases are noted as being septic at the present time. At the time, some of these children had Scarlet Fever they were under four years of age, and it was not considered wise to increase the risk of operation by removing Tonsils as well as Adenoids; at this time also the Tonsils were small and the difficulty of complete enucleation with a guillotine was considered.

In the second group of cases in which mastoid operations had been performed, in only two are the ears still discharging, but cases are included which throw some light on the after history of patients upon whom a simple cortical or Schwartze mastoid had been performed. In Bubb and Dunn, whose membranes are intact, the Tonsils and Adenoids had been removed before the mastoidectomy; it will be seen that for a short period two years after operation a temporary otorrhœa was noticed. The infectivity of a recent otorrhœa in Scarlet Fever and Diphtheria is suggested by two cases in this group.

The residue of Scarlet Fever Otitis in Hospital treated cases in 1924 is, as far as can be ascertained, five cases. Two more cases would have been added if patients had not received institutional treatment after leaving the Infectious Hospital.

Result of Questionnaire for Cases of Otorrhœa During 1924.

W—— aet 7.—Rt. Tonsils and Adenoids removed in 1924 on 80th day of otorrhœa; delay in operating due to case being severe septic Scarlet Fever. Ear dry on discharge, but large perforation; postero-inferior. Discharge started three days after going home; has run ever since.

K—— aet 7.—Fourteen weeks in hospital; Adenoids removed; large central perforation. Ear dry on discharge. Recurrence otorrhœa in 1927. Tonsils septic and nasal discharge.

W——. Adenoids removed in hospital. Small perforation near umbo. Reported wet ear in 1927, but did not appear for examination.

P——. Adenoids removed in hospital: central perforation; *taken home at parents' request* with ear discharging; otorrhœa ceased a few months ago. Father caught Scarlet Fever after child had been home one week.

W——. Reported moist ear at times. This is probably correct as there is a moist inferior perforation covered by cerumen. Tonsils septic; some Adenoids present.

Cases Reporting Otorrhœa in 1927 Upon Whom a Mastoid Operation Had Been Done in 1924.

B——. Tonsils and Adenoids removed and later Double Schwartze operation for chronicity of discharge. Ears dry; membranes intact. Ear ran in 1926 for a few days.

B——. Lt. Schwartze at Little Bromwich Fever Hospital for acute mastoiditis, ear dry on discharge: recurred 1926 and another Schwartze operation performed. Ear now dry. Tonsils are still present.

S——. Lt. Schwartze in hospital for chronicity of discharge, done on 37th day of discharge, and 80th of disease. At one time she had virulent K.L.B. in nose and ear discharge. Sent out with ear moist on 136th day of disease. Now dry, but has been under treatment recently.

H——. Rt. Schwartze for acute mastoiditis in hospital; runs for a day occasionally. Large perforation, dry.

D——. Lt. Schwartze for chronicity of discharge after Tonsils and Adenoids had been done in hospital. Ran for three weeks during 1926. Ears dry, membranes intact. Tonsils and Adenoids well removed. Some nasal discharge, left sided.

I——. Septic Scarlet with double acute mastoiditis. Mastoid wounds healed when patient became infected with virulent K.L.B. in nose and ear, subsequently discharged and wounds broke down. The ears still discharge.

In 1925 notes on the following 64 cases of otorrhœa are available.

Tonsils removed	28
Mastoid operations	12
No operation	24
	64

Analysing these figures, the *rationale* for the removal of tonsils and adenoids in the 28 cases has slightly altered from the previous years. In ten of these cases the tonsils and adenoids have been removed not on account of otorrhœa, but from the point of view of trying to cure the nasal discharge which resulted from Scarlet Fever. In a few cases very enlarged tonsils have been removed in the Fever Hospital in cases of otorrhœa which have dried, but it has been considered that these children with obviously diseased tonsils might be a source of danger to the community as possible carriers of the streptococcus of Scarlet Fever.

In the series of mastoid cases, which again bear a large ratio to the cases treated, in three cases acute mastoiditis accounted for the mastoid operation. In five others, however, tonsils and adenoids and a secondary paracentesis at the time of the tonsils and adenoids operation had failed to cure the otorrhœa, and as the discharge was becoming chronic, and signs pointed in our opinion to mastoid involvement, the mastoid antrum was drained. There is no doubt that the percentage of mastoid operations performed to the total incidence of otorrhœa in my series is large. Other writers in the past referred to a very small incidence of mastoid disease—1%. Personally, my own inclination is to open the mastoid antrum in Scarlet Fever as infrequently as possible. An infectious hospital is not the ideal convalescent ground for an operation, and mastoid wounds seem to give a great deal more difficulty here than in other surroundings in which one is accustomed to work. On the other hand, however, one has tried to send out all cases with dry ears and, if possible, healed drums, and it has only been found possible to do this in my cases with the help of operative interference upon the mastoid. In 1925, a case was discharged with otorrhœa, *at the parents' request*, and immediately produced a return case of Scarlet Fever.

In 1926 the incidence of otorrhœa has appreciably diminished and my advice has been sought by the Medical Staff to help them deal with cases of nasal discharge arising during Scarlet Fever and in which the persistence of the discharge has tended to delay the patients' discharge from hospital. In 35 of such cases in which the nasopharynx was thought to be infected, Tonsils and Adenoids or Adenoids alone were removed. In twenty-five of these the discharge stopped within three weeks. Such cases are only referred to me when becoming chronic and having defied all local methods of treatment in use. It must be pointed out, however, that in certain of these children seen in an Infectious Hospital, nasal discharge may have been present before admission, as such cases are frequently seen from the poorer quarters of a City in Hospital and Clinic practice. It is probable that many of these children with an unhealthy nasopharynx after an attack of Scarlet Fever—arguing on the analogy of Diphtheria carriers—are carriers of the Streptococcus of Scarlet Fever.

As this work has progressed, one has attempted to make investigations to see if one could separate the cases which were likely to benefit from one form of treatment more than another. In this connection I have kept a record of each case from the point of view of the appearance of the drum and site of perforation. In otological parlance, all perforations are central which do not extend to the bony wall of the meatus, but here I have used the term central as indicating easily a perforation in the neighbourhood of the umbo, which is about the central point of the drum. Anterior and postero-superior explain themselves. The following table shows the line of treatment adopted in one series of 76 consecutive cases, together with the duration of discharge after operation and in those not operated upon.

Otorrhœa Complicating Scarlet Fever, 1925-1926.

	Cases treated	T. & A. operation	No operation performed	Mastoid operation performed
	76	21	43	12
Duration of Otorrhœa in days		20	27	—

The following two tables show that the type of perforation was in the great majority central or anterior in the cases treated by the removal of Tonsils and Adenoids or by routine dressings. The Mastoid cases will be detailed later.

Cases in Which Tonsils and Adenoids Were Removed.

Cases	Duration of Discharge Average	Type of perforation
21	20 days.	Anterior or Central.

In three cases there was posterior bulging of the drum in other ear, and paracentesis was performed.

Cases Without Operation.

Cases	Duration of Otorrhoea.		Type of perforation
	Total number of days	Average in days	
43	1165	27	All Central or Anterior except in seven, in which it was in Posterior Quadrants.

It will be seen that in the above series the figures for the Tonsil and Adenoids operation are not so good as in the larger series already mentioned. This is accounted for by the fact that in many cases so operated upon the results are dramatic—the ear stops running a day or so after the operation. In a larger series such cases would improve the average. It cannot be said that in these cases the ear would have stopped naturally. In the following two cases, collected from another source, the discharge had been present for many years.

" D," aet 6.—Otorrhœa since the age of 2. Tonsils and Adenoids operation five weeks ago. Ear now dry. No other treatment given.

" G," aet 12.—Otorrhœa since infancy. Tonsils and Adenoids operation 1924. Ear dry and membrane healed June, 1925. No other treatment given.

In many of our first series the cases had had otorrhœa of 50 to 80 days duration. Layton, who has quite rightly adopted a critical attitude towards this form of treatment, admits that in properly selected cases the above results may be expected.

The larger group of 44 cases receiving no treatment includes some cases of mild otorrhœa lasting only a few days, and in which no perforation could be seen.

Coming now to the twelve cases in which the mastoid antrum was opened. In three cases there was a typical acute mastoiditis, but in eight the antrum was drained to cure a discharge which was becoming chronic.

The following table explains some of the eight cases.

Mastoid Antrum Drained for Chronicity

	Day of Onset	Previous Treatment.	Membrane.	Day of Mastoid Operation.	Ear Dry	Findings.
D.	16	T. and A. and P., 27th day	Nipple perforation	57	70	Granulation in mastoid antrum.
	Rise of temperature to 99° occasionally. No tenderness.					
B.	6	T. and A. and P. 16	Posterior bulging	27	71	Pus and granulations. Rt. mastoid
	Temperature normal.					
S.	9	T. and A. and P. 17	Sagging of roof	29	34	Granulations in antrum and streaks of pus in few cells.
M.	7	T. and A., 18	Sagging of roof	46	52	Granulations in large antrum, extending to tip.
P.	7	T. and A. and P. 20	Bulging	34	45	Three beads of pus and granulations.
	No tenderness. Temperature 100°. Pulse 120 day of operation.					
W.	40	Paracentesis recommended ; not carried out	Nipple	87 (T. and A. also)	117	Granulations.
N.	64	T. and A. on 76	—	124	128	Granulations to tip.
	(Post Inferior pulsating perforation). Other ear dried up four days after T. and A.					

P. = Paracentesis.

The average duration of discharge before operation was about 35 days, but a better idea is given by the individual periods—41, 47, 21, 20, 39, 27 and 60 days respectively. These cases had been given sufficient latitude if they did intend to dry up spontaneously. In all the results were satisfactory as regards healing of the membrane and cessation of discharge, but healing of the mastoid wound was not rapid and delayed their discharge from hospital. Sequestra were too frequent.

The conclusions which I havo drawn from this series are as follows:—

(1) The majority of perforations are anterior to the malleus or near the umbo. Discharge in these cases tends to natural cessation under ordinary routine treatment.

(2) A reduction in the duration of the otorrhœa will be achieved by removal of septic foci in the nose and throat—tonsils, adenoids, sinus infections. This will operate especially in a large series of cases, as in proportion the cessation of discharge is dramatic. Long persistence of previous discharge in the case of an anterior perforation is no contra-indication to this method of treatment.

(3) A posterior inflammation of the middle ear should be watched carefully. Early paracentesis before the membrane has ruptured should be aimed at. Failing this, a secondary paracentesis here and there will cure the condition. If the discharge persists for 28 days, if the membrane shows a boggy condition with nipple perforation, I would consider draining the mastoid antrum. Any spikes of temperature even to normal from the usual subnormal would make me confident that I was doing the right thing in opening the mastoid. What we are aiming at is a dry ear. Some delay in hospital due to delayed healing of the wound is negligible when the child's future ear condition is considered. This is the most difficult class of case to deal with. Fortunately, it is in the minority.

In the above series the only case sent out, at parents' request, with a running ear, produced a return case. Passing from the foregoing detailed description of a small series of cases, may I be permitted, after having been attached to a fever hospital for the relatively short period of five years, to give my impressions of Scarlet otitis as seen in hospital. At our hospital measles is not accepted as such for treatment at present, but there can be no doubt that it is responsible for as much, if not more, of the chronic otitis of adolescence as Scarlet Fever. My impression of Scarlet Fever otitis is that it is seldom dramatic in damage to membrane or hearing, but that its danger lies in lax treatment in the early stages in hospital. The child must go out with a dry ear and, if possible, a healed membrane. To this I would add a clean nasopharynx, remembering that the onset of otitis may not occur until the sixth week or after, when the child may have been discharged, or, as Gardiner points out, with the first cold caught after reaching home. In practice, we remove tonsils in hospital which appear likely to give trouble, although the ear has not discharged. In others, we advise this to be done immediately after discharge. It is probable that many of these cases with diseased tonsils and an unhealthy nasopharynx are carriers in their throats of the streptococcus of Scarlet Fever.

The most difficult and perhaps the most important question to investigate in this subject is whether cases discharged from the hospital without having developed otorrhœa developed this later as a result of residual infection remaining in the nasopharynx after Scarlet Fever. To ascertain this, every case admitted with Scarlet Fever should be questioned after the lapse of a year from the date of discharge from hospital as to whether otorrhœa had arisen in the intervening period. This investigation might perhaps be of value, as cases of otorrhœa are often seen in patients in the sixth to tenth week who have been kept in hospital on account of some other complication. I have found one child whose ears started to run in the year 1923 in the tenth week, having left hospital in the seventh. Ker*, writing in Edinburgh, stated in 1909 that he did not think that many cases of otorrhœa occurred after discharge from hospital. He based this statement, not on any exact figures from a questionnaire, but on conversations with the Aural Surgeons of the Edinburgh Hospitals and on the fact that Edinburgh not being a large city but well cared for in the otological sense, such cases, if frequent, would attract the attention of the Aural Surgeons. I have considered it worth while to send a questionnaire to eight hundred of the patients who passed through Lodge Road Fever Hospital in 1926, asking them if there had been otorrhœa since leaving Hospital, and when this occurred and if they could account for the ear discharge.

The following figures were recorded in this way:—

800 enquiries. 570 replies.

27 patients (4.7%) developed otorrhœa after discharge from Hospital, otorrhœa not having occurred while in the Infectious Hospital.

2 patients reported deafness, although otorrhœa had not occurred.

10 patients had a recurrence of otorrhœa; in 4 of these patients Tonsils and Adenoids had been removed.

4 patients complained of persistent nasal discharge.

During their stay in Hospital a systematic examination of all patients' throats is made and the interesting fact emerges that in 15 of these 27 patients who developed otorrhœa after discharge from Hospital, the Tonsils, and in some cases the Adenoids also, were noted as being abnormal. This proportion is striking and I would recommend that in such cases the parents should be informed of the condition of the patients' tonsils and advised to seek further advice if the enlargement does not subside or sore throats subsequently follow discharge from Hospital. I may add that before the result of this questionnaire was known we had adopted this course. On the other hand, of the 10 patients who had a recurrence of otorrhœa after having been discharged with a dry ear after suffering from otorrhœa while in Hospital, Tonsils and Adenoids had been removed in four cases. Removal of Tonsils and Adenoids cannot be looked upon, therefore, as a sure preventative of further recurrence of ear trouble.

Study of the duration of stay in Hospital shown in the table and the time of onset of the Otorrhœa after discharge from Hospital shows that Otorrhœa generally occurs some months after discharge from Hospital and could not have been prevented by a few weeks longer spent in Hospital; some of the patients had been in Hospital for well over the usual five to six weeks.

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* C. B. Ker. Infectious Diseases, 1909.

In all cases in which deafness was noted the tonsils had also been charted as enlarged.

	Time in Hospital	Otorrhœa present while in Hospital	Clinical Notes	After History
H——	9 weeks.	No.	Nasal disch. T. & A.	Otorrhœa "2 weeks," 6 months later.
D——	8 ,,	No.	Tonsils +.	Otorrhœa 8 months later.
S——	5 ,,	No.	Tonsils + +.	Deaf, No Otorrhœa.
A——	4½ ,,	No.	Tonsils + +. Nasal disch.	Rather deaf. Runs occasionally.
T——	4 ,,	No.	Tonsils +.	Runs "Each day."
F——	8 ,,	Yes.	A long history of previous Otorrhœa.	Otorrhœa, intermittent.
W——	5 ,,	No.	———	Once, "6 months later."
H——	5 ,,	No.	Tonsils +.	Slight deafness. No Otorrhœa.
H——	11½ ,,	Yes.	Otorrhœa in Hospital; dry on discharge. T. & A. + 12 days Otorrhœa.	Acute Mastoiditis four months later.
A——	12 ,,	No.	———	"Throat and ear trouble and Nasal Discharge."
L——	6 ,,	No.	Tonsils +	Nose and Eyes always run.
R——	5 ,,	No.	Tonsils + +	Earache. Nose running.
W——	4 ,,	No.	———	Has had catarrh.
H——	12½ ,,	Yes.	Otorrhœa. T. and A. removed.	Recurrence with measles.
A——	20 ,,	Yes.	Otorrhœa; dry on discharge. T. and A. removed.	Otorrhœa when she gets a cold.
B——	10 ,,	Yes.	Schwartze mastoid opn.	Occasionally Otorrhœa after a head cold.
P——	6½ ,,	No.	Tonsils + Watery Nasal disch.; dry on discharge.	Nose runs.
G——	5 ,,	No.	———	Ear ran 6 months after discharge with head colds.
S——	13 ,,	No.	Tonsils + +.	For a fortnight Otorrhœa 7 months after discharge.
C——	1½ weeks.	No.	Measles.	Ran for a few days after discharge.
S——	5 ,,	No.	Tonsils ragged. Adenoids marked. Watery Nasal disch.	Ear ran 1 year after.
L——	12½ ,,	No.	Tonsils +	Otorrhœa: not regular, but very deaf.
C——	12 ,,	No.	———	Otorrhœa present since 1 month after discharge.
R——	6 ,,	No.	———	Otorrhœa.
P——	6 ,,	No.	———	Otorrhœa soon after leaving hospital
M——	12 ,,	Yes.	Tonsils + + Lt. Otorrhœa 42nd-74th day. Rt. Otorrhœa 44th-53rd day. T. and A. removed, double paracentesis 53rd day. Dry on discharge.	Slight Otorrhœa.
H——	4 ,,	No.	———	Otorrhœa 1 week after discharge.
F——	3 ,,	No.	Measles. Watery Nasal disch.	Otorrhœa.
K——	5 ,,	No.	———	Otorrhœa.
B——	5 ,,	No.	Tonsils + +	Otorrhœa, 4 months later.
T——	4 ,,	No.	———	Otorrhœa, 4 months later.
P——	13 ,,	No.	"Embedded Tonsils."	Otorrhœa.
R——	9 ,,	Yes.	Septic S.F. Rt. Otorrhœa 23rd-33rd day. Ant. perforation. T. & A. + + Ear dry on discharge; operation recommended.	Otorrhœa.

T——	10½	,,	Yes.	Measles and S.F. Otorrhœa 8th-46th day. Posterior perforation. Ts. and As. removed 19th day. Dry on discharge.	Otorrhœa, intermittent.
B——	13	,,	No.	Nasal disch. on adm.	Otorrhœa 5 months after leaving Hospital.
W——	6½	,,	No.	"Ragged embedded tonsils."	Otorrhœa after a cold 3 months after leaving Hospital.
G——	3	,,	No.	Tonsils + +	?Otorrhœa.
R——	13	,,	Yes.	Rt. Otorrhœa 12-41st day. Antr. Perfn. Dry on discharge.	Otorrhœa.
R——	11	,,	Yes.	Double Otorrhœa. Rt. dried quickly. Lt. large postr. perfn. Dry on discharge.	Otorrhœa.
C——	18	,,	No.	Ts. and As. removed.	Very deaf. No Otorrhœa.
R——	5½	,,	No.	———	Otorrhœa 3 weeks after discharge.
R——	5	,,	No.	———	Otorrhœa when he has a cold.
W——	4	,,	No.	Tonsils + +	Otorrhœa.

POLIOMYELITIS (INFANTILE PARALYSIS).

A good deal of confusion exists in the minds of the lay public as to the nature and symptoms of this disease. In the first place it is an infectious disease, spread from person to person by droplet infection from the mouth or nose. It differs from most other infectious ailments in that it is doubtful if it ever spreads directly from patient to patient; apparently it is always spread by a healthy person who carries the infection in the nose or throat. In Birmingham there have been several instances where three or four persons have been attacked in one house, all being infected by a healthy carrier at the same time. Usually, however, one case only occurs in a household.

When the infection has gained access to the body it locates itself in the nervous system, the nerves, the spinal column, or parts of the brain. The effect on the nervous system is produced by a poisoning of the nerve element destroying its function or by a local inflammatory reaction. The poisoning may be recovered from rapidly, and in such cases complete recovery results. The inflammatory reaction may be increased greatly by improper treatment at the early stage. It is, therefore, of the greatest importance to employ proper treatment at the earliest moment. The real difficulty in most cases is that of making certain that the case is one of poliomyelitis.

When proper treatment is delayed the nerve supply to the muscles is damaged often past repair, and as a result the patient suffers from paralysis of one muscle or of many groups of muscles, resulting in his becoming partially or completely crippled for the rest of his life.

During the past 10 years, 168 cases of Poliomyelitis have been notified. It is certain that this does not represent the total number existing, for cases are being found in institutions long after the disease commenced. There are, in addition, many cases of mild infection which are never recognised.

About the same number of males are attacked as females. The deaths among the notified cases numbered 21, which gives a fatality of 12.5 per cent.

The following table shows the number of cases and deaths in 1926 and preceding years :—

Year.		Cases notified	Died	Complete recovery.	Some Paralysis.
1917	...	11	2	6	3
1918	...	4	—	2	2
1919	...	14	1	6	7
1920	...	1	—	—	—
1921	...	11	4	1	6
1922	...	6	—	1	5
1923	...	33	3	1	29
1924	...	39	5	5	25
1925	...	11	3	5	3
1926	...	38	3	3	32

Particulars of the 1926 cases are given below :—

No.	Notified.	Sex.	Age.	Condition at April, 1927.
1	June 16	M	16	Slight limp.
2	,, 17	F	2	Right leg paralysis from thigh.
3	July 5	F	3	Right ankle paralysis.
4	Aug. 11	F	3	Weakness of both legs. Splints.
5	,, 20	F	10 mths.	No trace.
6	,, 26	M	10 mths.	Slight limp.
7	,, 30	M	2	Paralysis both legs. Unable to walk.
8	Sept. 6	M	9	Died August 30th.
9	,, 15	M	1¼	Weakness right shoulder.
10	,, 15	F	3	Splint on left ankle. Toe movements only.
11	,, 20	M	2	Paralysis both legs.
12	,, 22	F	1½	Right leg and left arm in splints.
13	,, 22	M	1½	Paralysis right shoulder.
14	,, 27	F	1¾	Paralysis right arm.
15	,, 27	F	4½	Slight limp, right leg.
16	,, 27	M	1	Slight muscular weakness right arm and leg.
17	,, 27	F	4	Weakness left ankle.
18	,, 27	F	7	Paralysis right leg.
19	,, 28	M	6	Paralysis both legs.
20	,, 28	M	3½	Recovered.
21	Oct. 4	M	11	Paralysis both legs. Can stand with assistance.
22	,, 6	F	6	Paralysis both legs. Bed case.
23	,, 7	M	2	One leg and arm in splints.
24	,, 12	F	2	Paralysis left arm.
25	,, 20	M	4	Paralysis right leg.
26	,, 20	M	2	Paralysis both legs. Bed case.
27	,, 20	F	1	Died November 21st.
28	,, 27	F	1¾	Severe paralysis right leg. Partial paralysis left leg.
29	Nov. 4	F	3	Slight impairment of shoulder movements.
30	,, 4	M	7 mths.	Right drop foot.
31	,, 8	M	5	Recovery. Slight muscular wasting.
32	,, 20	M	24	Recovery.
33	,, 27	F	3	Paralysis right leg from hip.
34	,, 27	M	20	Died November 26th.
35	,, 29	F	6 mths.	Paralysis of left leg below knee.
36	Dec. 7	M	2	Complete paralysis left leg.
37	,, 15	M	2½	Weakness left leg. Slight limp.
38	,, 15	M	40	Right wrist affected. Can write with difficulty.

In 1926 the cases were distributed as follows :—

June	2 cases	
July	1 ,,	
August ...	4 ,,	
Sept.	13 ,,	28 cases in three months.
Oct.	8 ,,	
Nov.	7 ,,	
Dec.	3 ,,	

Of the 31 cases in which some disability followed it was found that this varied from a " slight weakness in one limb " to the most complete paralysis and wasting of muscles in all four extremities.

This disease is now perhaps the most frequent and most potent cause of crippling. It is, therefore, most important that the best treatment should be available, for there is no doubt that early recognition and good treatment does prevent a great deal of the paralysis. This is indicated by the fact that where there are careful parents, who call in a competent doctor early, and where means are available to obtain the services of a good nurse, the results are very good when compared with the results obtained where other conditions are present.

The Health Visitors follow up the cases and do their best to get the parents to send the patient to hospital for the necessary treatment. The results are not satisfactory for many reasons, the chief being that the parents tire of taking the patient to hospital, especially when not very much improvement is evident as a result of many months' visits to hospital.

Two conditions are needed :—

(1) Early diagnosis. This means that the parent must call the doctor early and that the doctor must take steps to confirm his diagnosis.

(2) That proper treatment by immobilisation be carried out at once and later skilful electrical or massage treatment be kept up for a prolonged period.

POLIOENCEPHALITIS.

Four cases of polioencephalitis were notified during the year. Of these two died, one recovered completely and the other is left with slight facial paralysis. Case mortality 50 per cent.

No.	Notified.	Sex.	Age.	Result.
1	Jan. 13	F	23	Complete recovery.
2	July 6	F	24	Died July 1st.
3	Sept. 22	M	2	Slight facial paralysis.
4	Dec. 1	F	4 mths.	Died November 11th.

ENCEPHALITIS LETHARGICA.

During the year 108 cases were notified and of these, after investigation and observation, 89 were diagnosed as Encephalitis Lethargica, and of this number 36 died.

In addition, 8 other deaths occurred in patients who had already been notified earlier than 1926.

Year.	Cases.	Deaths.	Fatality per cent.
1919	11	5	45.5
1920	18	7	38.9
1921	25	8	32.0
1922	12	4	33.3
1923	29	12	41.4
1924	282	44	15.6
1925	92	32	34.8
1926	89	36	40.4
Totals	558	148	26.5

Age and Sex Distribution of Cases and Deaths.

	Cases.		Deaths.		Total	Total
Age groups.	Males.	Females.	Males.	Females.	Cases.	Deaths.
Under 10 years ...	7	4	1	2	11	3
10—15 ,, ...	1	3	—	1	4	1
15—25 ,, ...	5	8	2	1	13	3
25—35 ,, ...	7	9	—	3	16	3
35—45 ,, ...	6	7	1	5	13	6
45—55 ,, ...	9	13	3	8	22	11
55—65 ,, ...	2	5	2	4	7	6
65 years and over	1	2	1	2	3	3
Totals	38	51	10	26	89	36

Twenty-three of the year's cases were of the chronic type with a history of illness extending over a period of from one to three years, and of these 10 died.

There is no doubt that a considerable number, especially of the mild type of the disease, escape notification, hence deductions based on notifications and fatality percentage must be made with caution.

After Effects.

One of the peculiar features of the disease is the occurrence of later manifestations which usually develop gradually after the acute attack has passed, and from which there may be a slow recovery or a progressive weakening, terminating in death.

The percentage of cases in which some residua occur is a very large one, and it is extremely difficult to present these after effects in a precise form.

Of the 53 surviving cases notified in 1926, 13 were said to have recovered. In five there was very marked improvement, and five were steadily improving; the others suffered from defective vision, various forms of paralysis, neuritis, irritability, etc., and 11 exhibited the Parkinsonian Syndrome, where the patient has loss of facial expression, stiffness or muscular rigidity and slowness of movement, combined with tremor of the limbs, and probably some mental changes.

Each year there is a gradual accumulation of cases, now numbering approximately 100, of which 40 are children, presenting such chronic, mental and physical changes as to exhaust the patience and resources of their relatives. This type of case requires constant supervision and skilled attention such as can only be obtained in a suitably equipped institution.

CEREBRO SPINAL FEVER.

There were 10 cases of this Disease reported during the year 1926, of whom nine died. Of these, 8 were confirmed bacteriologically. The only case that recovered was one of two reported in the same house. Both were very severe and confirmed bacteriologically and serum treatment was given. The response was immediate and most marked in the case that recovered.

No.	Notified.	Sex.	Age.	Result.
1	Jan. 18	F	3 mths.	Died Jan. 29th.
2	May 27	F	1½	Died May 30th.
3	Aug. 20	F	2	Died Sept. 3rd.
4	Sept. 29	F	16	Died Sept. 29th.
5	,, 29	M	7	Very severe case. Lumbar puncture, etc. Responded to serum treatment. Recovery.
6	Nov. 16	M	6	Died at Bournemouth Sept. 9th.
7	,, 22	F	20	Died Nov. 16th.
8	,, 29	M	4 mths.	Died Dec. 24th.
9	Dec. 18	M	3 mths.	Died Dec. 14th.
10	,, 22	F	4 mths.	Died Dec. 22nd.

The cases and deaths in the last 10 years have been as follows:—

Year.	Cases notified.	Deaths.	Fatality per cent.
1917	29	21	72
1918	16	10	62
1919	14	9	64
1920	25	18	72
1921	9	7	78
1922	18	16	89
1923	4	2	50
1924	11	8	73
1925	7	6	86
1926	10	9	90

TUBERCULOSIS.

The mean mortality from tuberculosis for two comparable five year periods has been as follows:—

All Forms of Tuberculosis.

	Death-rate per 1,000.	
5 years, 1901-1905	1.79	
,, 1922-1926	1.10	Reduction, 39%

Pulmonary Tuberculosis.

5 years, 1901-1905	1.34	
,, 1922-1926	.95	Reduction, 29%

Non-Pulmonary Tuberculosis.

5 years, 1901-1905	.45	
,, 1922-1926	.15	Reduction, 67%

These figures show a very substantial decrease in the mortality during the past 25 years.

The new cases of Tuberculosis (all forms) also show a reduction. For this purpose two three-year periods are compared, i.e., 1917-19 with 1924-1926.

New Cases of Tuberculosis.

		Incidence per 1,000.	
3 years,	1917-1919	3.69	
,,	1924-1926	1.96	Reduction, 47%

The death-rates for the same three-yearly periods were as follows :—

Deaths from Tuberculosis.

		Rate per 1,000.	
3 years,	1917-1919	1.48	
,,	1924-1926	1.10	Reduction, 26%

From the above figures, which are taken for groups of years rather than for individual years, it is obvious that the new cases in Birmingham, are being reduced in number at a much greater rate than are the deaths. The spread of infection is being stopped while we still have a number of deaths taking place of people who were first infected some years ago and have had their lives prolonged. This is evident from the figures below :—

Deaths in 1926 from Pulmonary Tuberculosis with Year of Notification.

		No. of Deaths.	Percentage.
Notified prior to	1917 ...	45	5
Notified in	1917 ...	9	1
,,	1918 ...	18	2
,,	1919 ...	18	2
,,	1920 ...	21	2
,,	1921 ...	28	3
,,	1922 ...	30	3
,,	1923 ...	54	6
,,	1924 ...	104	12
,,	1925 ...	216	24
,,	1926 ...	309	34
Un-notified	... ...	53	6
		905	100

Roughly about 25 per cent. of the deaths which occurred last year had been notified as cases more than three years ago.

The next three tables show the incidence and mortality during the past 26 years.

Tuberculosis (All Forms).

	New Cases.	Rate per 1,000.	Deaths.	Death-rate per 1,000
1901-1905	—	—	6,918	1.79
1906-1910	—	—	6,176	1.51
1911-1915	—	—	6,533	1.51
1916-1920	16,717	3.73	6,303	1.40
1921-1925	10,300	2.20	5,228	1.11
1917	3,543	3.95	1,405	1.56
1918	3,254	3.75	1,385	1.60
1919	3,116*	3.37	1,188*	1.28
1920	2,974	3.28	1,001	1.10
1921	2,247	2.45	1,035	1.13
1922	1,961	2.12	1,049	1.13
1923	2,166	2.32	1,006	1.08
1924	2,129*	2.22	1,055*	1.10
1925	1,797	1.89	1,083	1.14
1926	1,704	1.78	1,024	1.06

*53 weeks.

PULMONARY TUBERCULOSIS

	New Cases.	Rate per 1,000.	Deaths.	Death-rate per 1,000
1901-1905	—	—	5,195	1.34
1906-1910	—	—	4,733	1.16
1911-1915	—	—	5,287	1.22
1916-1920	14,680	3.27	5,309	1.18
1921-1925	8,694	1.86	4,513	0.96
1917	3,074	3.42	1,169	1.30
1918	2,905	3.35	1,171	1.35
1919	2,704*	2.92	1,019*	1.10
1920	2,609	2.87	843	.93
1921	1,969	2.15	890	.97
1922	1,669	1.80	899	.97
1923	1,785	1.91	860	.92
1924	1,780*	1.85	934*	.97
1925	1,491	1.57	930	.98
1926	1,421	1.48	905	.94

* 53 weeks.

NON-PULMONARY TUBERCULOSIS.

	New Cases.	Rate per 1,000.	Deaths.	Death-rate per 1,000
1901-1905	—	—	1,723	.45
1906-1910	—	—	1,443	.35
1911-1915	—	—	1,246	.29
1916-1920	2,037	.46	994	.22
1921-1925	1,606	.34	715	.15
1917	469	.53	236	.26
1918	349	.40	214	.25
1919	412*	.45	169*	.18
1920	365	.41	158	.17
1921	278	.30	145	.16
1922	292	.32	150	.16
1923	381	.41	146	.16
1924	349*	.37	121*	.13
1925	306	.32	153	.16
1926	283	.30	119	.12

* 53 weeks.

TUBERCULOSIS CASES.

The following statement shows the number of cases notified as suffering from various forms of tuberculosis during 1926:—

	New Cases Notified in 1926.	Deaths not Notified as Cases.
Pulmonary Tuberculosis	1,421	58
Tubercular Meningitis	38	30
Tubercle of the Abdomen	56	10
Tubercle of the Spinal Column ...	20	1
Tubercle of the Joints	52	0
Disseminated Tuberculosis ...	10	7
Tubercle of the Glands and other parts	107	4

The incidence of Pulmonary Tuberculosis on males and females was as follows:—

	Incidence-rate.		Death-rate.	
	Males.	Females.	Males.	Females.
1921	2.49	1.85	1.27	0.71
1922	2.08	1.55	1.27	0.71
1923	2.21	1.65	1.17	0.70
1924	2.20	1.54	1.25	0.72
1925	1.88	1.29	1.26	0.73
1926	1.64	1.34	1.13	0.78

The distribution of Tuberculosis in Wards is shown in the next statement.

DISTRIBUTION OF TUBERCULOSIS.

		Case-rate per 1,000 in 1926.		
		Pulmonary.	Non-Pulmonary.	Total.
Central Wards ...	St. Paul's	2.28	.43	2.71
	St. Mary's	2.50	.30	2.80
	Duddeston and Nechells ..	2.21	.48	2.69
	St. Bartholomew's	1.89	.28	2.17
	St. Martin's and Deritend	2.52	.42	2.94
	Market Hall	1.46	.38	1.84
	Ladywood	1.62	.50	2.12
Middle Ring ...	Lozells ... ..: ...	1.62	.29	1.91
	Aston	1.98	.41	2.39
	Washwood Heath	1.86	.31	2.17
	Saltley	1.30	.38	1.68
	Small Heath	0.83	.24	1.07
	Sparkbrook	1.22	.30	1.52
	Balsall Heath	1.85	.21	2.06
	Edgbaston	0.97	.11	1.08
	Rotton Park	1.33	.24	1.57
	All Saints'	1.13	.35	1.48
Outer Ring ...	Soho	0.64	.21	0.85
	Sandwell	0.96	.19	1.15
	Handsworth	1.27	.10	1.37
	Erdington North	0.95	.34	1.29
	Erdington South	1.03	.17	1.20
	Yardley	0.78	.24	1.02
	Acocks Green	0.88	.19	1.07
	Sparkhill	1.02	.15	1.17
	Moseley and King's Heath ...	0.67	.18	0.85
	Selly Oak	1.21	.20	1.41
	King's Norton	0.83	.16	0.99
	Northfield	2.06	.56	2.62
	Harborne	1.32	.34	1.66

	Average Case-rate per 1,000.		
	Pulmonary.	Non-Pulmonary.	Total.
Central Wards	2.07	.40	2.47
Middle Ring	1.41	.28	1.69
Outer Ring	1.05	.23	1.28

In the Central Wards both the cases and the deaths are still about twice as high as in the outer ring. The Central areas are, however, improving more rapidly than the outer districts as can be seen from the next two tables.

DEATH-RATE FROM PULMONARY TUBERCULOSIS.

	Central Wards.	Middle Ring.	Outer Ring.	Whole City.
1901-05	1.94	1.12	.75	1.34
1906-10	1.67	1.02	.71	1.16
1911-15	1.89	1.12	.76	1.22
1916-20	1.81	1.10	.78	1.18
1921-25	1.42	0.95	.65	0.96
1926	1.34	0.88	.69	0.94
Decrease* ...	27%	15%	13%	28%

*1921-25 compared with 1901-5.

DEATH-RATE FROM NON-PULMONARY TUBERCULOSIS.

	Central Wards.	Middle Ring.	Outer Ring.	Whole City.
1901-05	.56	.41	.33	.45
1906-10	.43	.33	.27	.35
1911-15	.43	.26	.21	.29
1916-20	.33	.20	.17	.22
1921-25	.21	.13	.14	.15
1926	.18	.11	.09	.12
Decrease*	63%	68%	58%	67%

*1921-25 compared with 1901-5.

It will be seen that while the fall in the mortality from pulmonary tuberculosis was 13 per cent. in the outer ring it was no less than 27 per cent. in the central wards. As regards the mortality from non-pulmonary tuberculosis the fall has been approximately 60 per cent. in each of the three groups of wards.

The relative mortality from pulmonary tuberculosis in other towns is shown in the figures below:—

DEATH-RATE PER MILLION FROM PULMONARY TUBERCULOSIS.

(From the Registrar-General's Statistical Review, 1925).

England and Wales	833
London	948
Birmingham	953
Manchester	1330
Liverpool	1210
Leeds	1068
Sheffield	793
Bristol	946

The Tuberculosis death-rates in the United States and England and Wales in 1920 and 1924 respectively are shown below:—

United States, 1920 ...	Males	921
	Females	869
England & Wales, 1924	Males	1156
	Females	934

The reduction in the United States between 1900 and 1924 was—for Males 55 per cent. and for females 68 per cent.

DECLINE IN TUBERCULOSIS.

The foregoing statistical tables indicate the more important facts about the prevalence of tuberculosis in Birmingham. Two questions arise from them. (1) What has caused the reduction in cases and deaths? and (2) How can the rate of decline be expedited?

Many different opinions are held as to what is responsible for the decline in the incidence of tuberculosis in England and in other countries, a decline which commenced 40 or 50 years ago.

It is true that this decline has taken place to a lesser extent in areas where little propaganda work has been carried out and in areas where ignorance still prevails.

(1) It is probably correct to say that the most important cause has been a higher general intelligence among the people, enabling them to appreciate the laws which govern the maintenance of good health.

(2) The work of Professor Robert Koch in demonstrating in 1883 the germ which produces tuberculosis, and of the subsequent investigations of many who followed him, has given the whole world a truer conception of the way to avoid infection.

(3) The isolation of large numbers of highly infectious persons suffering from pulmonary tuberculosis in workhouses and in hospitals and sanatoria has definitely limited the chances of exposure of a susceptible person to massive doses of infection from a chronic case.

(4) Anti-tuberculosis propaganda in the form of home instruction and treatment in sanatoria have done much to educate the patient and his friends as to where the danger lies.

(5) There is no doubt that the proportion of the general public who maintain themselves in good health and, therefore, in a state to resist infection, is larger now than it was many years ago.

(6) The food of the poorer clases is better now than it ever was and this undoubtedly increases resistence to tuberculosis.

(7) Healthy outdoor exercise is, particularly among women, more in evidence than formerly.

(8) Many other contributory causes could be mentioned but the above are probably the most important.

It is often stated that bad housing is in itself a potent cause of Tuberculosis, and that if everybody was provided with a wholesome house it would not be necessary to provide sanatoria or hospitals. A demonstration of the futility of such an argument can be obtained by an inspection of the yearly death-rate for tuberculosis, say, during the past 15 years, when overcrowding and bad housing has been particularly rife, and yet the rate of decline has been faster than ever.

What is Being Done in Birmingham.

(A) Every assistance is given to the medical profession for arriving at an early and accurate diagnosis of cases. It is regarded as essential that the cases should be found out early. For this purpose a consultation with the Tuberculosis Officer can be obtained by any doctor at any time. This often results in observation in hospital for a week or two, with X-Ray examinations and examinations of the sputum on frequent occasions.

(B) As soon as the ailment is diagnosed as tuberculosis the case is placed on a register and is kept there until recovery or death takes place. Some cases are sent to sanatoria for long periods in the hope of complete recovery, others are sent to sanatoria for temporary improvement and for instruction, while others are isolated in tuberculosis hospitals.

(C) Each patient (unless under preventive treatment by his own doctor) is visited at intervals of either a few weeks or several months according to his needs, by a trained tuberculosis nurse whose duty it is to assist the patient in his treatment and in the prevention of the spread of the disease in the home.

The sections of the report immediately following deal with the work of the Tuberculosis Officer under paragraphs A. and B.

The work under paragraph C. is briefly indicated for 1926 in the next table.

Work of Tuberculosis Visitors.

New cases reported	1,887
Primary visits paid to civilians	1,910
Primary visits paid to ex-soldiers	12
Periodic re-visits paid to civilians	21,805
Periodic re-visits paid to ex-soldiers	2,156
Special re-visits	11,042
Useless calls	2,483
Total Calls	39,408

Patients provided with a shelter during year	48
Patients granted extra nourishment	79
Patients found to be sharing bed	1193
Patients found to be sharing bedroom	332
Fresh beds sent out on hire or loan	110
Total beds now out on hire or loan	955

TREATMENT OF TUBERCULOSIS.

The patients admitted to the City Sanatoria during the 52 weeks of the statistical year were as follows :—

Patients Treated at Sanatoria.

	Yardley Road.	Salterley Grange.	Romsley Hill.	West Heath.	Total.
In sanatorium at beginning of year	280	55	69	95	499
Admitted during year	996	193	287	338	1,814
Discharged	826	202	261	215	1,504
Died	132	1	16	116	265
Remaining at end of year	318	45	79	102	544

In addition to the above, 44 cases were admitted to the Woodlands and Forelands and Orthopædic Hospital (Cripples' Union) and 18 to the General and Jaffray Hospitals, 12 to the Queen's Hospital, 20 to the Children's Hospital, 9 to Moseley Hall Convalescent Home and 4 to St. Gerard's Hospital at Coleshill.

THE ANTI-TUBERCULOSIS CENTRE.

(Report by Dr. G. B. Dixon, Chief Tuberculosis Officer).

The Anti-Tuberculosis Centre is open daily for five days during the week, and on Saturday for half a day. There are four evening sessions each week. New patients are examined and old patients are re-examined by appointment during the morning and afternoon; treatment is given during the evenings to those who are working, and in the afternoon to children and those women and men who are not working. Those patients who are unable to attend for examinations are visited and examined by members of the medical staff at their own homes. Consultations are also held between doctors and the Tuberculosis Officer at the patients' own homes. On return from Sanatoria, patients are again seen at the Centre where many continue to attend as out-patients; some, however, return to their own doctors. The patients attending the Centre are examined from time to time, and those old patients who have discontinued regular attendance are re-examined after varying intervals of time.

Attendances and Examinations of Patients.

During the year 1926, the total number of attendances both for the purpose of diagnosis and treatment, was 33,037, the total attendances for treatment alone were 19,172; the total number of examinations was 10,624, and in addition there were 3,241 X-Ray examinations. As compared with the previous year there was a decrease in the number of attendances for treatment and a slight decrease in the number of examinations.

Attendances for treatment alone	19,172
For examination	10,624
For X-Ray examination	3,241
Total attendances	33,037

During the year, 1,421 new cases of pulmonary tubercle were notified to the Medical Officer of Health. Of this number, 1,063 or 74.8 per cent. were examined at the Centre. There were 283 cases of non-pulmonary tuberculosis notified during the year and 37 or 13 per cent. were examined at the Centre.

Treatment Recommended.

We examined 6,980 old and new patients at the Centre during the year. The following table shows the number of newly notified and suspect cases, and the number of patients coming up for re-examination. It also shows the numbers recommended for the different forms of treatment. No less than 1,059 patients were examined at their own homes.

	First Examinations.		Re-examinations.	
	Newly notified.	Suspects or Contacts.	Old Cases.	Suspects or Contacts.
Sanatorium Treatment	565	298	652	18
Dispensary Treatment	39	18	179	3
Dispensary for supervision	4	4	1273	2
Out-patient Light Treatment	5	4	8	—
Domiciliary Treatment	107	54	1129	1
Home Treatment for other than P.T.	—	—	107	—
No Treatment Required	343	1030	879	258
	1063	1408	4227	282

Classification of Patients According to Group of Disease.

The following tables show the classification of the patients examined according to the Group of disease; adults and children are shown separately.

Adults.

	First Examinations.		Re-examinations.	
	Newly notified.	Suspects or Contacts.	Old Cases.	Suspects or Contacts.
Group I.	73	53	1060	9
Group II.	250	155	1304	5
Group III.	290	95	883	6
Group IV.	37	12	62	—
No definite signs of active tuberculosis	217	636	159	92
	867	951	3468	112

Children.

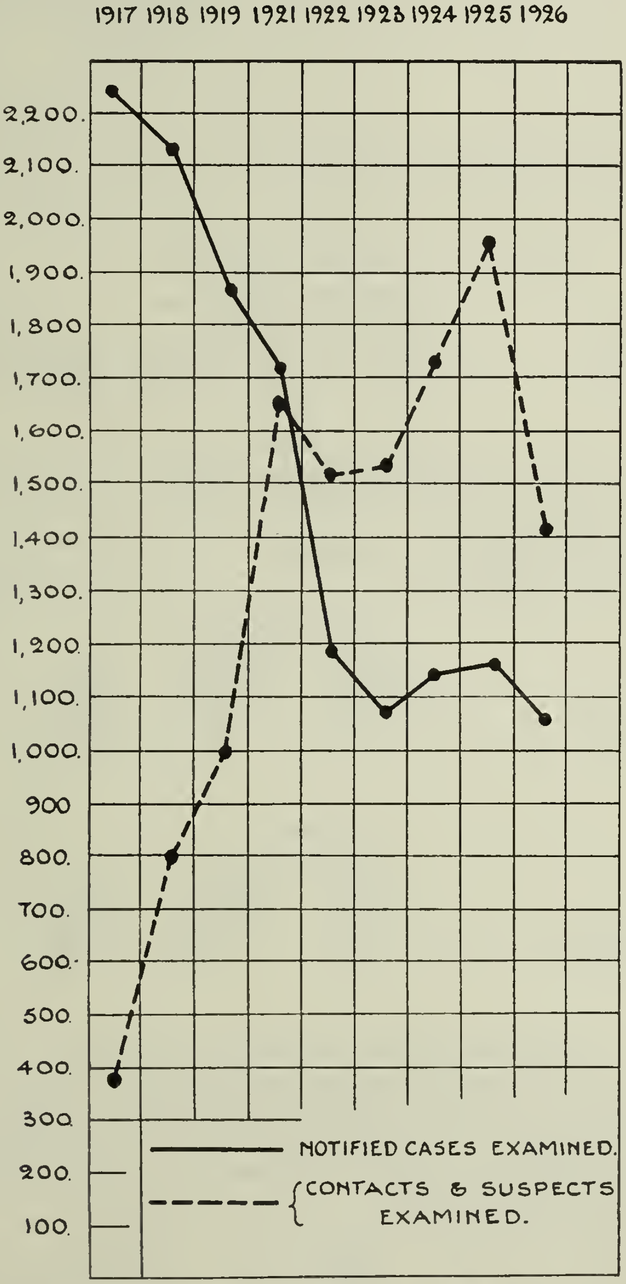
	First Examinations.		Re-examinations.	
	Newly notified.	Suspects or Contacts.	Old Cases.	Suspects or Contacts.
Group I.	14	30	312	4
Group II.	10	13	185	2
Group III.	9	10	53	1
Group IV.	43	13	111	3
No definite signs of active tuberculosis	120	391	98	160
	196	457	759	170

In certain instances patients included in the various Groups are suffering from other forms of tuberculosis in addition to pulmonary, but for convenience are classified as pulmonary cases when this type of the disease is present in association with other forms.

"Contacts" and Notified Cases.

During the past few years there has been a marked reduction in the number of patients notified as suffering from pulmonary tubercle which is very satisfactory. Whilst the number of notified cases has diminished the number of "suspects" notified has increased, suggesting that the diagnosis of pulmonary tubercle is being left more and more in the hands of the medical staff at the Centre. In the following graph the figures for notified cases and suspects are compared over a period of years.

PULMONARY TUBERCULOSIS.



Working Capacity When First Examined.

The following table shows the working capacity of the new cases when they were examined for the first time. It is interesting to note that among adults 39.1 per cent were sent to us whilst their working capacity was still unimpaired, and only 19.4 per cent. came to us when totally incapacitated. In the case of the children this point is more emphasised; 69.2 per cent. had an unimpaired working capacity and 5.9 per cent. were totally incapacitated, the working capacity indicated here being ability or otherwise to attend school regularly.

	Newly notified Patients.		Contacts and Suspects.	
	Adults.	Children.	Adults.	Children.
Unimpaired working capacity	172	108	540	344
Impaired working capacity	425	61	328	101
Totally incapacitated	270	27	83	12
	867	196	951	457

FAMILY HISTORY.

A survey of the family and social history of 4,919 patients who were examined during the year shows that there was no history of existing tuberculosis or knowledge of relatives dying of, or suffering from. tuberculosis in connection with 2,657 or 54.01 per cent. In 2,262 or 45.9 per cent. there was a history of some near relative or intimate friend either being affected with tuberculosis, or having succumbed to it. In 298 instances or 6.05 per cent. the relative affected was the father, and in 219 or 4.4 per cent. the relative affected was the mother, and in 266 or 5.4 per cent. a brother or sister was affected. In 703 instances two or more relatives were known to have suffered from tuberculosis.

DENTAL TREATMENT.

The services of a part-time dental surgeon are utilised at the Centre for the necessary treatment of our patients. The treatment is conservative in type, and consists mainly of extractions, fillings and scalings. There is no fund to assist in the provision of artificial dentures. Those patients who wish to provide their own can do so under conditions advantageous to themselves by arrangement with the dentist. The condition of the teeth and gums of most of our patients is carefully noted, and in the table below is briefly summarised the dental condition of patients seen during the year so far as dental caries, masticatory power, and the state of the gums were concerned. The dental surgeon informs me that there were 802 extractions, 18 fillings and 47 scalings, and dentures were supplied in 54 instances.

CONDITION OF TEETH AND GUMS.

Number of Teeth with infected pulp chambers.			Masticatory power in Molars and Bicuspeds.			State of Gums.		
None.	1 to 4.	More than 4.	Six or more.	Less than 6.	None.	Healthy.	Gingivitis.	Pyorrhœa.
1,257	2,817	516	2,732	1,361	530	3,094	900	511

SPUTUM RESULTS.

Amongst the adult patients suffering from tuberculosis there were 1,693 or 31.3 per cent. who presented tubercle bacilli in their sputum, and amongst the children there were 36 or 2.2 per cent. whose sputum was positive for tubercle bacilli.

In the two tables below the sputum conditions of all patients referred to us during the year are summarised. They are sub-divided into adults and children, and are arranged to show the sputum conditions of the different types of patient.

ADULTS.

	First Examinations.			Re-examinations.	
	Newly notified.	Suspects or Contacts.	Old Cases.	Suspects or Contacts.	Total.
Tubercle Bacilli present	337	127	1224	5	1693
Tubercle Bacilli absent	277	496	1617	62	2452
No Sputum	253	328	627	45	1253
					5398

CHILDREN.

	First Examinations.			Re-examinations.	
	Newly notified	Suspects or Contacts.	Old Cases.	Suspects or Contacts.	Total.
Tubercle Bacilli present	2	2	32	—	36
Tubercle Bacilli absent	28	93	183	31	335
No sputum	166	362	544	139	1211
					1582

LABORATORY WORK—YARDLEY ROAD SANATORIUM.

We examined during the year 2,613 specimens of urine and 5,814 specimens of sputum. Of the sputum specimens examined 1,046 presented tubercle bacilli after staining alone, and the remaining specimens were tested by the sedimentation method devised by Ellerman and Erlandsen. Of these, 1,381 or 29 per cent. after this test were found to contain tubercle bacilli; these were not found in every instance after one examination and in some instances the test had to be repeated on several occasions before a positive result was obtained, as shown in the following table:—

Tubercle bacilli found after 1st sedimentation in 853 instances.
,, ,, ,, ,, 2nd ,, ,, 388 ,,
,, ,, ,, ,, 3rd ,, ,, 93 ,,
,, ,, ,, ,, 4th ,, ,, 47 ,,
,, ,, ,, ,, 5th ,, No change

In the Laboratory at the Centre during the year there were 7,971 specimens of sputum examined; there were 74 other specimens also examined. Of sputum specimens, 1,646 which were previously negative after one staining were examined by the concentration method of Davis, the results being as follows:—

Tubercle Bacilli demonstrated after 1st concentration ... 51 or 5.09%
,, ,, ,, ,, 2nd ,, ... 4 or .51%
,, ,, ,, ,, 3rd ,, ... No change.

COMPLETED CASES.

During the year 2,061 patients completed a course of treatment at the Centre, of whom 1,688 were adults and 373 were children.

In the next table, the working capacity at the commencement, and at the end of a completed period of treatment is given for those old patients who were examined during the year. The group of disease quoted was determined at the first examination.

WORKING CAPACITY.

	GROUP I.		GROUP II.		GROUP III.		GROUP IV.	
	Adults	Children	Adults	Children	Adults	Children	Adults	Children
Unimpaired working capacity becoming impaired	16	6	5	—	1	—	—	—
Unimpaired becoming totally incapacitated	—	—	—	—	—	—	—	—
Unimpaired capacity for work persisting	29	8	4	—	—	—	—	2
Impaired capacity for work becoming unimpaired	231	69	79	11	10	2	5	16
Impaired becoming totally incapacitated	4	1	29	—	55	4	—	3
Impaired working capacity persisting	293	88	435	67	150	11	16	38
Total incapacity becoming impaired	30	13	73	11	100	3	10	4
Total incapacity becoming unimpaired	9	4	13	5	2	—	3	2
Total incapacity persisting	—	—	4	—	75	4	7	1
	612	189	642	94	393	24	41	66

AFTER CARE.

Results of investigation into present condition of patients treated in the past.

In the following tables are set out, as briefly as possible, the main points in connection with an investigation undertaken to ascertain the condition of our past patients who received treatment at the Centre between the years 1922 and 1925 inclusive.

PRESENT STATE OF PATIENTS ON THE DISPENSARY REGISTER IN PAST YEARS WHOSE SPUTUM CONTAINED TUBERCLE BACILLI.

ADULTS.

	Patients who were alive in 1926. Groups			Patients who have died.			Patients who have been lost sight of			Total
	I.	II.	III.	I.	II.	III.	I.	II.	III.	
1922	8	39	38	10	85	292	2	11	20	505
1923	16	54	84	15	80	323	5	14	12	603
1924	23	63	131	4	59	396	—	2	8	686
1925	17	97	119	2	41	291	1	5	12	585
	64	253	372	31	265	1302	8	32	52	2379
					CHILDREN.					
1922	—	1	1	—	—	5	—	—	—	7
1923	1	4	4	—	—	3	—	—	—	12
1924	—	1	—	—	1	3	—	—	—	5
1925	—	1	4	—	—	7	—	—	—	12
	1	7	9	—	1	18	—	—	—	36

PRESENT STATE OF PATIENTS ON THE DISPENSARY REGISTER WHOSE SPUTUM DID NOT CONTAIN TUBERCLE BACILLI.

	Patients who were alive in 1926.				Patients who have died.				Patients who have been lost sight of.				Totals.
	Adults.		Children.		Adults.		Children.		Adults.		Children.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1922	77	114	64	35	62	50	6	2	22	22	2	3	459
1923	75	126	70	48	54	59	6	7	1	24	1	4	475
1924	121	113	49	47	37	32	4	1	3	5	1	—	413
1925	138	114	40	44	65	72	—	9	12	12	1	—	507
Totals	411	467	223	174	218	213	16	19	38	63	5	7	1854

Present State of Patients Treated in Previous Years who were Suffering from Non-Pulmonary Tuberculosis.

	Bones & Joints.				Abdominal.				Other Organs.				Peripheral Glands.				
	1922	1923	1924	1925	1922	1923	1924	1925	1922	1923	1924	1925	1922	1923	1924	1925	Totals.
Patients who were alive in 1926	8	11	12	32	5	10	5	15	—	2	6	12	8	12	19	39	196
Patients who have died	1	6	3	5	1	4	2	3	—	—	1	3	—	1	—	2	32
Patients who have been lost sight of	1	2	—	2	—	1	1	2	—	—	—	1	3	—	3	—	16
Patients transferred to pulmonary	—	—	—	1	—	—	—	2	—	—	—	1	—	—	—	4	8
Totals	10	19	15	40	6	15	8	22	—	2	7	17	11	13	22	45	252

Radiographic Section.

Radiography in connection with the differential diagnosis of pulmonary disease is essential if correct conclusions are to be arrived at. The majority of our patients receive examination by means of the flourescent screen, and in a number of instances films are also taken.

The following radiographs show some cases of pulmonary tuberculosis and some of the diseases which can be, and are, mistaken for pulmonary tuberculosis. (See page 88).

No. 1 is a case of hydatid disease in the mediastinum.

No. 2 is a case of enchondroma of a rib cartilage.

No. 3 is a case of endothelioma of the lung.

No. 4 is a large aortic aneurysm.

No. 5 is a case of primary malignant growth in the lung.

No. 6 is a case of multiple secondary malignant growths in the lung.

Nos. 7 and 8 show respectively secondary deposits in the lungs and abdominal glands from a melanotic sarcoma in connection with the supra-renal body.

No. 9 is a case of silicosis, resulting from the inhalation of silica particles whilst engaged as a sandblaster.

No. 10 is a case of (acute) miliary tuberculosis.

No. 11 is a case of bilateral chronic fibroid phthisis.

No. 12 is a case of bilateral acute pulmonary tuberculosis in a child of 14 years of age.

No. 13 is a case of bronchial tuberculous adenitis and pulmonary tuberculosis associated.

No. 14 is a case showing extensive cervical adenitis (calcified) of tuberculous origin and associated with pulmonary tuberculosis.

Summary.

1. There was a slight decrease in the number of patients' attendances during the year 1926 as compared with 1925.
2. No less than 74.8 per cent. of the total number notified in the City during the year as suffering from pulmonary tubercle were examined at the Centre.
3. We visited and examined 1,059 patients in their own homes.
4. During the year 3,241 X-Ray examinations of our patients were made.
5. Amongst adult patients, suffering from tuberculosis, 31.3 per cent. presented tubercle bacilli in their sputum, and amongst the children, 2.2 per cent.
6. Of the patients treated during the periods 1922—1925 some 2,415 presented sputum containing tubercle bacilli.

   Of this number, 29.2 are still alive, 66.9 per cent. are known to be dead, and 3.8 per cent. have been lost sight of.
7. During the same period, 1,854 patients whose sputum contained no tubercle bacilli, were treated.

Of this number, 68.7 per cent. are known to be still alive, 25.1 per cent. of the patients are dead, and 6.09 per cent. have been lost sight of.

SANATORIA FOR TUBERCULOSIS.

Report by Dr. G. B. Dixon, Chief Tuberculosis Officer.

The Birmingham Public Health Committee has 604 beds available for the treatment and prevention of pulmonary tuberculosis. These beds are distributed in four different Sanatoria, namely, Yardley Road Sanatorium, West Heath Sanatorium, Salterley Grange Sanatorium, near Cheltenham, and Romsley Hill Sanatorium, Halesowen. The Yardley Road Sanatorium is situated in a suburban part of the city, about 3½ miles from its Centre, and has accommodation for 325 patients; the beds are available for male and female adults and children. There are 154 beds for male adults, 10 of which are reserved for the admission of patients for observation purposes, and the remainder are utilised for the treatment of those in the intermediate and advanced stages of tuberculosis. There are 52 beds provided for female adults, including 8 beds reserved for observation purposes. The female patients admitted are those in the early and intermediate stages of tuberculosis. There are 119 beds for the treatment of children, and included in these are 18 beds available for the purpose of observation. Children in all stages of tuberculosis are admitted.

The West Heath Sanatorium is situated about 6 miles from the centre of the City; it contains 115 beds, 91 of which are set apart for the treatment of female adult patients suffering from advanced tuberculosis, while 24 beds are available for male adults.

The Salterley Grange Sanatorium with 68 beds is situated in the Cotswold Hills, about 3½ miles from Cheltenham, and has accommodation for 38 males and 30 females. The patients selected are all of adult age, and are the most promising from a medical standpoint of all our patients, the majority suffering from tuberculosis in an early stage.

Romsley Hill Sanatorium is situated in the Clent Hills, 11 miles from the centre of the City, and has accommodation for 63 males and 33 females. Those in all stages of the disease are admitted.

Admission to these different Sanatoria is arranged by the staff of Tuberculosis Officers, after examination of the patients at the Municipal Anti-Tuberculosis Centre, 44a, Broad Street. The treatment given to patients in the Sanatoria is on similar lines, and includes hygienic and dietetic treatment, graduated rest, exercise and occupation, the employment of appropriate drugs when indicated, or specific treatment by means of the various tuberculins and vaccines, etc. Heliotherapy, treatment by ultra-violet rays, and artificial pneumothorax are undertaken in suitable cases.

Total Numbers Treated in the Sanatoria and Duration of Stay.

During the calendar year 1926, there were 1,748 patients discharged from all the Sanatoria. Of this number 917 were adult males, 583 were adult females, 136 were male children, and 112 were female children.

The average durations of stay in days for male, female, and child patients in the Sanatoria were as follows:—61.4 days for males, 90.04 days for females, and 147.9 days for children.

Observation Patients.

The beds reserved for the purpose of observation are at the Yardley Road Sanatorium, and vary in number from time to time, the average being about thirty. Observation patients are those who, after careful and repeated examinations at the Centre, are found to be indefinite, either as to the absence or presence of tuberculosis, or as to its activity or otherwise when present, and are usually admitted for a period varying from two to four weeks. Of the 1,748 treated in all the Sanatoria, 284 or 16.2 per cent. were admitted primarily for observation to Yardley Road Sanatorium. The medical findings after varying periods of observation in connection with these patients are set out in the following table:—

	Positive diagnosis.	Negative diagnosis.	Total
Adult Males	16	57	73
Adult Females	22	54	76
Children	46	89	135
	84 = 29.5%	200 = 70.4%	284

Discharged Patients, Tabulated According to Sex and Age.

In the following table the patients have been classified according to their sex and age. It will be seen that the largest number of our patients are included in the age-period between twenty and twenty-five years.

	Females.	Males.
Under 10 years	62	93
11 to 15 ,, ...	65	50
16 to 20 ,, ...	100	82
21 to 25 ,, ...	97	171
26 to 30 ,, ...	102	24
31 to 35 ,, ...	75	103
36 to 40 ,, ...	70	133
41 to 45 ,, ...	48	147
46 to 50 ,, ...	48	113
51 to 55 ,, ...	13	66
56 to 60 ,, ...	11	47
Over 60 ,, ...	4	24
	695	1,053

Classification of Patients' Disease.

In this table the patients are scheduled according to the classification of the Ministry of Health, as follows:—

Group I.—Cases with slight constitutional disturbance, if any, e.g., there should not be marked acceleration of pulse nor elevation of temperature except of very transient duration; gastro-intestinal disturbance or emaciation, if present, should not be excessive.

The obvious physical signs should be of very limited extent as follows:—Either present in one lobe only and in the case of an apical lesion of one upper lobe not extending below the second rib in front or not exceeding an equivalent area in any one lobe; or where these physical signs are present in more than one lobe, they should be limited to the apices of the upper lobes and should not extend below the clavicle and the spine of the scapula.

No complication (tuberculous or other) of prognostic gravity should be present. A small area of dry pleurisy should not exclude a case from this group.

Group III.—Cases with profound systemic disturbance or constitutional deterioration; with marked impairment of function, either local or general, and with little or no prospect of recovery.

All cases with grave complications, whether tuberculous or not, should be classified in this group, e.g., diabetes, tuberculosis of larynx or intestine, etc.

Group II.—All cases which cannot be placed in Groups I. and III.

Patients suffering from non-pulmonary tuberculosis are classified according to the site of the lesion and are placed under Group IV.

	Group I.	Group II.	Group III.	Group IV.	No active signs.
Adult Males.					
Yardley Road Sanatorium	19	132	290	18	57
Salterley Grange Sanatorium	29	86	5	2	—
Romsley Hill Sanatorium	11	123	64	—	—
West Heath Sanatorium	—	13	68	—	—
Adult Females.					
Yardley Road Sanatorium	28	75	10	18	54
Salterley Grange Sanatorium	33	44	3	—	—
Romsley Hill Sanatorium	2	48	28	—	—
West Heath Sanatorium	2	16	221	1	—
Children.					
Yardley Road Sanatorium	50	53	11	39	89
West Heath Sanatorium	1	2	3	—	—
	175	592	703	78	200

Sputum.

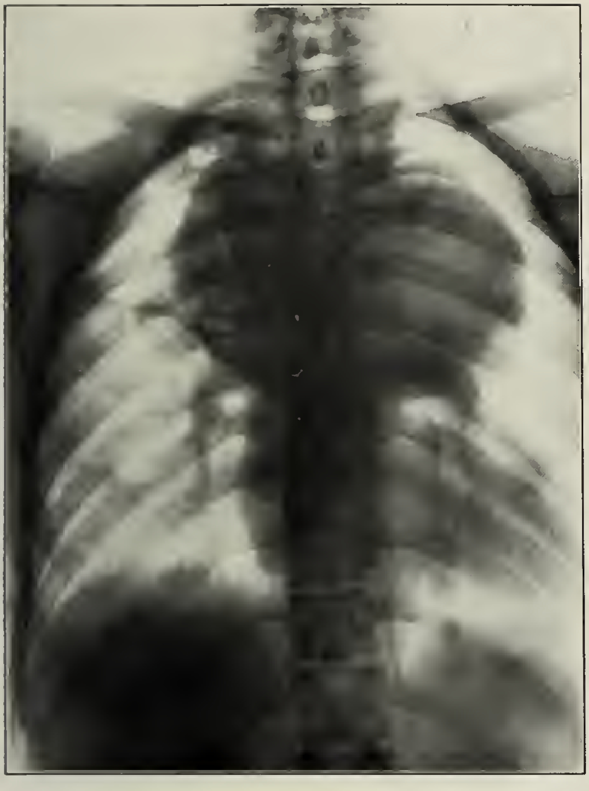
Out of the total number of adult patients discharged from the Sanatoria during the year, 960 or 64% presented tubercle bacilli in their sputum whilst in the Sanatoria.

	No sputum persisting	No sputum becoming T.B.—	No sputum becoming T.B.+	T.B.— persisting	T.B.— becoming T.B.+	T.B.— becoming no sputum	T.B.+ persisting	T.B.+ becoming T.B.—	T.B.+ becoming no sputum	Totals	
Yardley Road Sanatorium	21	3	2	97	17	9	273	29	8	459	Adult Males.
	26	1	1	37	—	16	35	7	8	131	Adult Females.
	115	1	1	5	—	27	—	—	3	152	Children.
	—	—	—	—	—	—	—	—	—	200	Negative Diagnosis
										942	
Romsley Hill Sanatorium	2	1	—	36	7	1	131	20	—	198	Adult Males.
	6	—	1	11	1	4	47	6	2	78	Adult Females.
										276	
Salterley Grange Sanatorium	14	1	1	21	2	19	44	4	16	122	Adult Males.
	20	—	4	4	5	15	18	2	12	80	Adult Females.
	—	—	—	1	—	—	—	—	—	1	Child.
										203	
West Heath Sanatorium	—	2	—	15	7	—	48	8	1	81	Adult Males.
	13	3	6	28	14	3	158	9	6	240	Adult Females.
	4	—	1	—	—	—	1	—	—	6	Children.
										327	
	221*	12	17	255	53	94	755	85	56	1748	

Occupations.

In the following table the occupations of both male and female adult patients are shown:—

	Males.	Females.
Out-door occupations	70	6
Domestic occupations	28	273
Sedentary occupations	43	45
Commercial occupations	28	20
Engineering trade	192	79
Metal trade	213	67
Building trade	68	—
Other trades	275	93
	917	583



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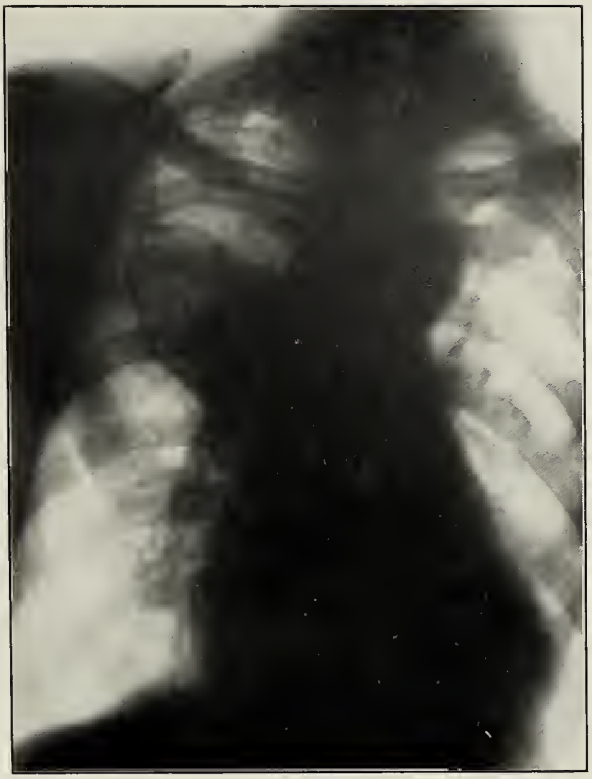

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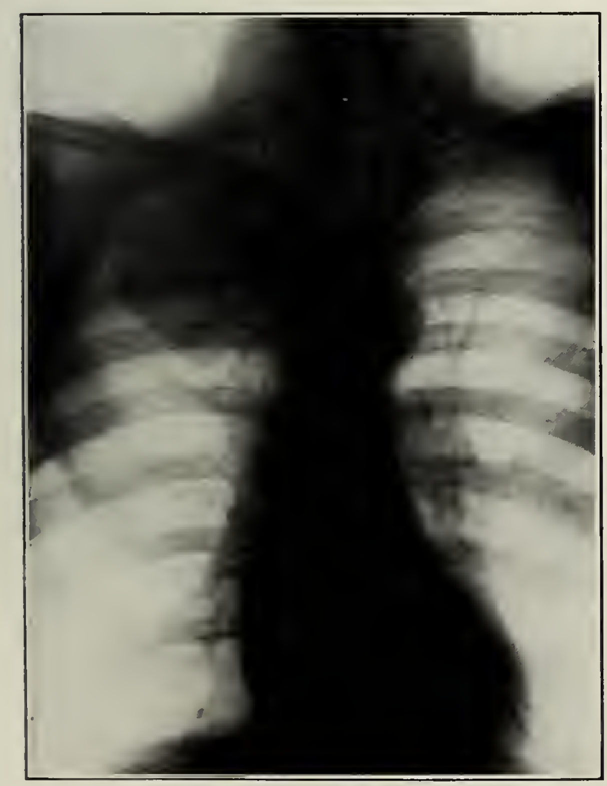

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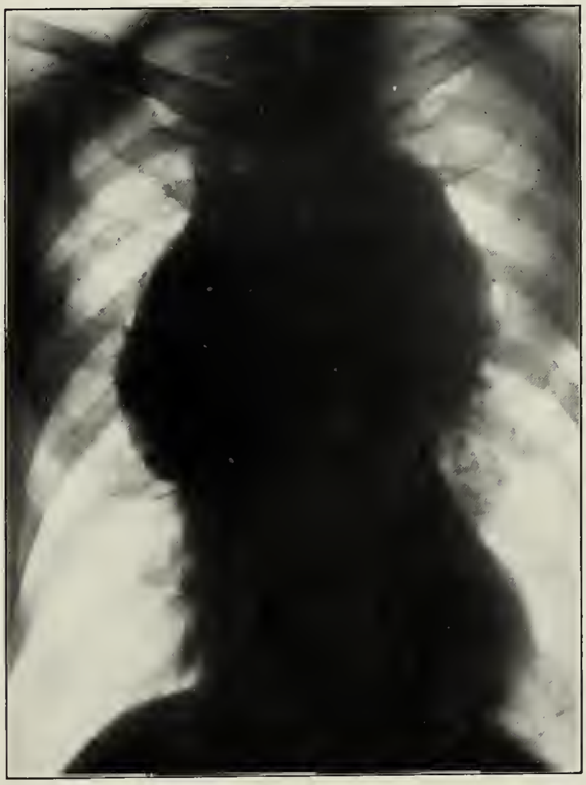

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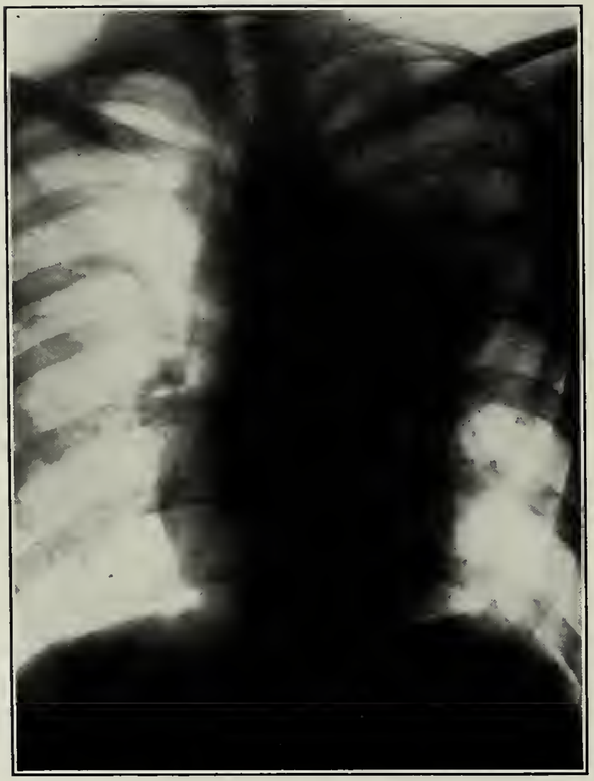
No. 1. Large hydatid cyst in the mediastinum.
No. 2. Enchondroma of a rib cartilage.
No. 3. Endothelioma of the lung.
No. 4. Large aortic aneurysm.



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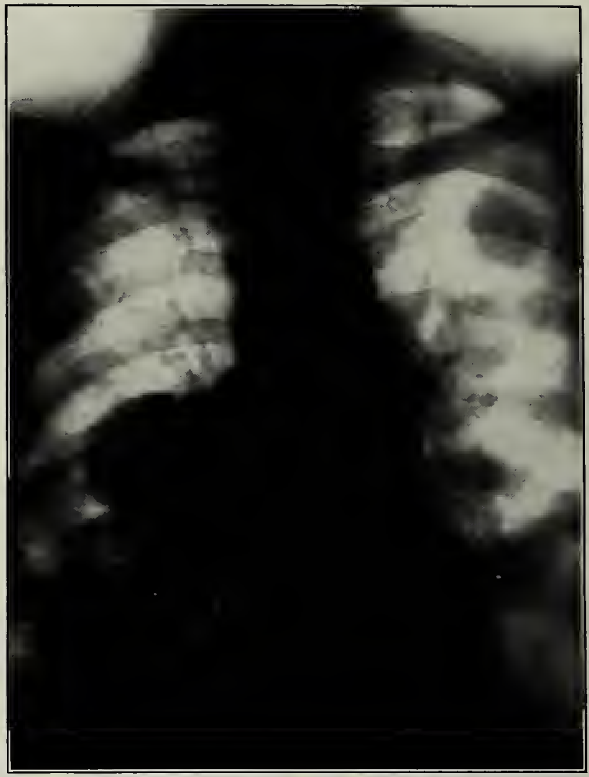

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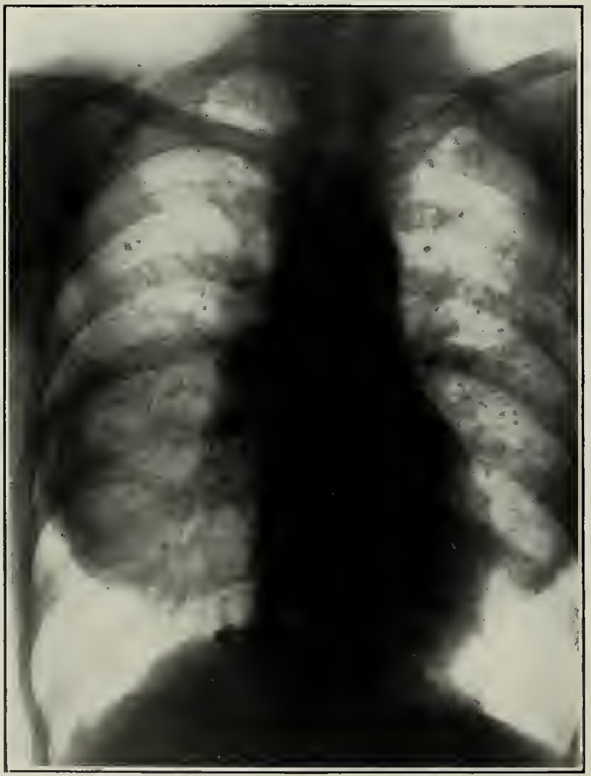

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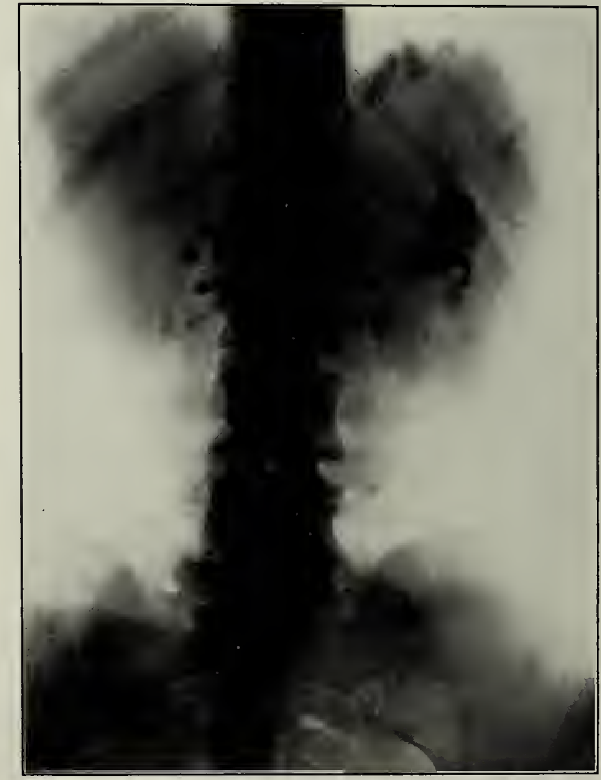

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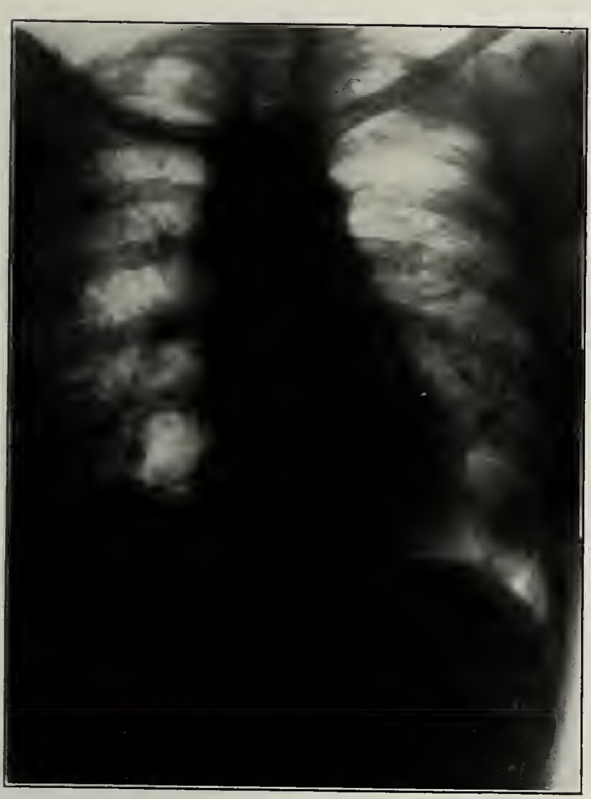
No. 5. Primary malignant growth in the lung.
No. 6. Multiple secondary malignant growths in the lungs
No. 7. } Show respectively secondary deposits in the lungs and abdominal glands from a melanotic sarcoma in
No. 8. } connection with the supra-renal body.



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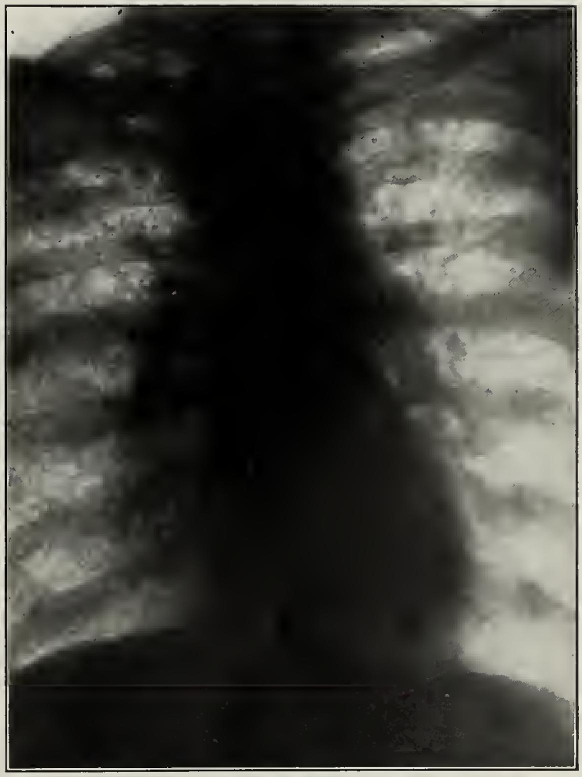

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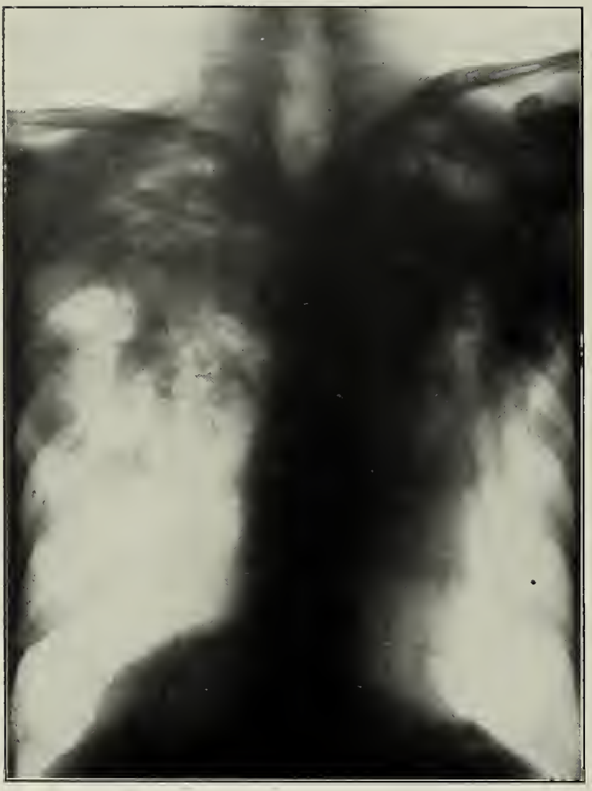
No. 9 Silicosis resulting from the inhalation of silica particles whilst engaged as a sandblaster.

No. 10 (acute) miliary tuberculosis.



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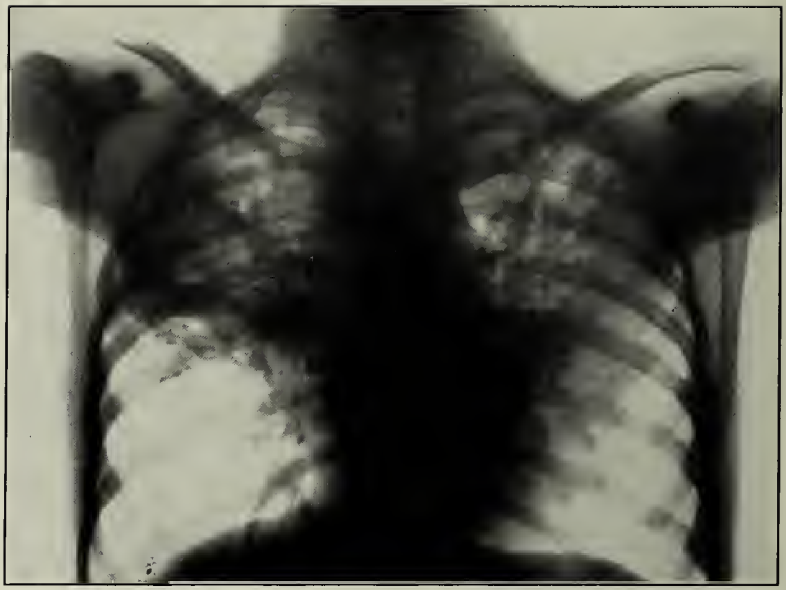

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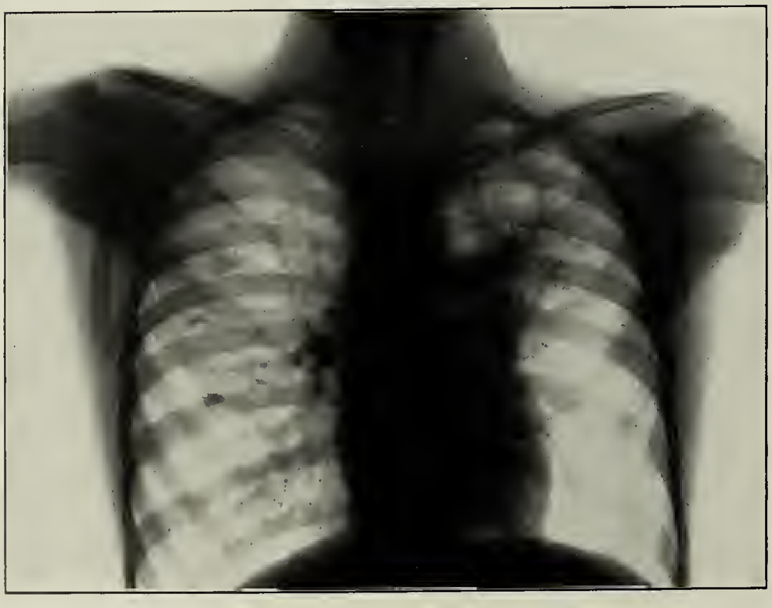

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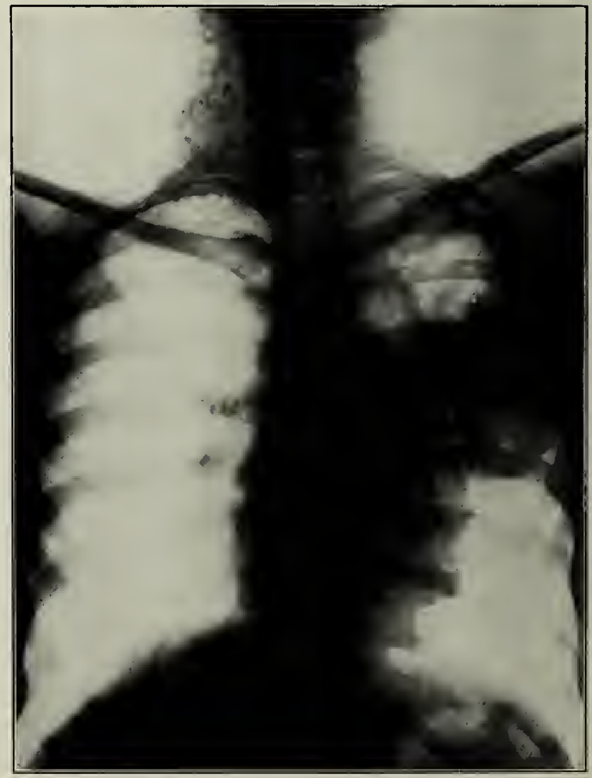

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No. 11 Bilateral chronic fibroid phthisis.
No. 12 Bilateral acute pulmonary tuberculosis in a child of 14 years of age.
No. 13 Bronchial tuberculous adenitis and pulmonary tuberculosis associated.
No. 14 Extensive cervical adenitis, (calcified) of tuberculous origin and associated with pulmonary tuberculosis.

Treatment Carried Out Whilst in Sanatoria.

The majority of the patients treated in the Sanatoria during the year accepted the treatment advised by the Medical Officers. In 1,104 instances, extensions of the treatment primarily advised were accepted. There were 96 patients who left the Sanatoria against medical advice and one only was dismissed. Deaths in Sanatoria numbered 262, the great majority of which occurred amongst patients in the "hospital beds" provided for those with advanced and acute disease.

	Remaining full time recommended.	Extension of time accepted.	Left against medical advice.	Left before time with M.O.'s consent.	Dismissed.	Died.
Adult Males	140	535	51	37	1	153
Adult Females	63	359	32	28	—	101
Children	13	210	13	4	—	8
	216	1104	96	69	1	262

Pulmonary Condition After Treatment.

In the following table is shown the condition of the patients' pulmonary disease on discharge. A description of the different terms is given at the conclusion of this report.

	Disease quiescent	Disease improved	No material improvement	Died	No active signs	Obs. left before diagnosis made
Adult Males.						
Yardley Road Sanatorium ...	56	162	120	121	57	—
Romsley Hill Sanatorium ...	4	138	45	11	—	—
Salterley Grange Sanatorium	50	63	9	—	—	—
West Heath Sanatorium ...	7	42	11	21	—	—
Adult Females.						
Yardley Road Sanatorium ...	42	59	26	4	54	—
Romsley Hill Sanatorium ...	1	51	21	5	—	—
Salterley Grange Sanatorium	33	36	10	1	—	—
West Heath Sanatorium ...	11	84	54	91	—	—
Children.						
Yardley Road Sanatorium ...	65	68	14	5	89	—
West Heath Sanatorium ...	1	2	—	3	—	—
Salterley Grange Sanatorium	—	1	—	—	—	—
	270	706	310	262	200	—

Illnesses Previous to Admission.

In 172 or 11.4 per cent. instances, adult patients had a history of having suffered from pleurisy at periods varying from one to twelve years prior to their examination by us. In 112 or 7.4 per cent. of the adult patients there was a history of pneumonia having occurred from one to twelve years previously. Large numbers of patients attributed the onset of their tuberculosis to an attack of influenza, and in the case of many of our child patients measles appears frequently as a probable predisposing cause of tuberculosis.

Gain or Loss in Weight.

Amongst a total of 1,748 patients discharged from Sanatoria, many of whom were advanced hospital cases, having been admitted for the purpose of prophylaxis, 85 or 4.8% remained stationary, and 1,512 or 86.4 % gained weight in amounts varying from one to fifty pounds.

Working Capacity.

The working capacity of patients is shown in the following table:—

	Males.	Females.	Children.	Total.
Unimpaired capacity for work becoming impaired ...	1	—	1	2
Unimpaired capacity persisting	2	2	4	8
Impaired capacity for work becoming unimpaired ...	35	28	14	77
Impaired capacity for work becoming totally incapacitated	75	46	5	126
Impaired capacity persisting	470	242	103	815
Total incapacity becoming impaired	124	72	21	217
Total incapacity becoming unimpaired	—	3	—	3
Total incapacity persisting	153	136	11	300
Negative Diagnosis	57	54	89	200
	917	583	248	1748

Summary.

The average duration of patients' stay for all the Sanatoria was 61.4 days for males, 90.04 days for females and 147.9 days for children.

Of the patients discharged from all Sanatoria no less than 16.2% had passed through the observation beds at Yardley Road Sanatorium.

The largest number of our patients in any demi-decade were those drawn from the age period 20-25 years.

Over 40.2 per cent. of the patients discharged were in Group III., 33.8 per cent. were in Group II., and 10 per cent. were in Group I.

There were 64 per cent. of our total discharged patients who presented tubercle bacilli in their sputum whilst in the Sanatoria. The number who showed bacillary loss, decided after three examinations was 141 or 14.5 per cent.

Over 86 per cent. of all patients discharged from Sanatoria gained weight in amounts varying from one to fifty pounds, only 4 per cent. remained stationary.

Some 262 patients died in " hospital " beds in the various sanatoria. This figure represents 29.0% of the total deaths from pulmonary tubercle occurring in the city during the year.

" Quiescent."—Cases which have no symptoms of tuberculosis and no signs of tuberculous disease, except such as are compatible with a completely healed lesion, and in which sputum, if present, is free from tubercle bacilli.

" Improved."—Cases short of " quiescent " in which the general health is fair and the symptoms of tuberculosis have materially diminished.

" No Material Improvement."—All other patients who are alive.

THE ARTIFICIAL LIGHT CLINIC AT THE SANATORIUM, YARDLEY ROAD.

Report by Dr. G. B. Dixon, Chief Tuberculosis Officer.

The Clinic is open daily on five days weekly from 9 a.m. until 6 p.m. and on Saturdays from 9 a.m. until 2 p.m.

The Light Clinic is a detached building situated within the Sanatorium grounds and is divided into two sections. One contains a large waiting room, where relatives who accompany patients can be accommodated, and where patients may rest for a time after treatment, before leaving the building. It also includes a doctor's room where patients are examined, a sister's room where clinical records, etc., are kept, and in addition there is a room where photographic records are obtained.

The other section includes two treatment rooms, in each of which there are two 75 amps. open-flame carbon arc lamps. Each of these rooms is capable of accommodating six or eight sitting patients, or three recumbent patients. The ante-room to the treatment rooms contains the patients' dressing cubicles, and leading out of this is the sanitary annexe which contains two shower-baths and W.C.'s.

The Clinic is utilized for the treatment of patients resident in the sanatorium, and for others who are patients at the Anti-Tuberculosis Centre, many of the latter having previously been Sanatorium patients. Every patient treated in the Light Clinic is suffering from tuberculosis in one form or another. The majority of our patients are afflicted with bone or joint tuberculosis, laryngeal tuberculosis, tuberculosis of the glands, lupus, etc. In some cases pulmonary tuberculosis is also associated.

All patients before receiving, and during treatment, are carefully examined physically, and when necessary radiographically. Ordinary photographic records are also made in suitable cases. Pulse and temperature readings are also recorded. As a preliminary to therapeutic irradiation, the patients' skin reaction to the effect of artificial light is always tested by exposing small areas of the skin, for varying periods, and noting the reaction as indicated by erythema. With this information as a guide, the initial period of exposure is decided upon. Primarily, the patients' feet and legs are exposed, then the arms, next, various aspects of the trunk, until the whole surface of the body is irradiated.

The artificial light is derived from four open flame carbon-arc lamps, designed by Professor Reyn of Copenhagen, consuming 75 amperes. Direct current is used, and the voltage is sixty-five.

Two of these lamps are used in each light treatment room. The two lamps in one room are fitted with simple non-cored carbons. The period of exposure to this lamp, for a general bath, as a maximum, may be from one to two hours. The spectrum of light from this lamp is said to approximate more nearly to the spectrum of sunlight, than that of many other lamps.

In another treatment room, each of the two lamps is fitted with a simple non-cored carbon, and with a carbon having a mineralised core. This arrangement produces a light with a more intense ultra-violet content, and one which is therapeutically more powerful than the light from similar lamps fitted with non-cored carbons only. The period of exposure necessary is therefore much shorter, and as a result more patients can be treated with these lamps in a given period of time, than are treated with similar lamps when fitted with non-cored carbons.

In many cases of tuberculosis, where the lesion is a superficial one, as in cases of lupus, superficial ulcerations and sinuses, the local application of artificial light, in conjunction with the general bath, will be found to give better results than are usually obtained from general irradiation alone.

For this purpose, we use a tungsten carbon-arc lamp of five amperes with a voltage of 220. The light from this lamp is concentrated by passing through a quartz lens, and is used at a distance of fifteen inches. Used in this way it is exceedingly powerful, and should only be applied primarily for a period of two minutes, but in suitable cases it may be gradually increased to eight minutes.

These local applications of artificial light are given to in-patients on alternate days to the general bath, but in the case of out-patients, follow the general irradiation. The results appear to be similar whether the local application of light is given on the same, or on alternate days to the general bath.

For patients suffering from multiple tuberculous lesions, when one of the lesions is pulmonary, even if inactive, the greatest care in carrying out the treatment is requisite. When any activity is discernible in an associated pulmonary lesion, the case must be carefully considered before recommending ultra-violet irradiation.

The results obtained in some cases of combined pulmonary and laryngeal disease, where the former is not too active, certainly justify the utilisation of this form of treatment, but it is advisable in such cases to restrict the period of exposure to twenty or twenty-five per cent. of that given to an uncomplicated case. A thin vest should also be worn to protect the thorax. If these precautions are observed, reactions and ill effects are less likely to occur.

In the case of non-pigmentors, more than ordinary care has to be observed in treatment if satisfactory results are to be obtained. The period of exposure should be definitely shorter than for those who pigment well, and increases in dosage should be less frequent and of shorter duration.

When in the Light Bath, the patients wear goggles or shades to protect the eyes, a loin cloth, and wooden pattens. After irradiation each ambulatory patient has a shower-bath and rub down, and remains in the waiting-room for a time after dressing and before leaving. Couch patients who are immobilised on frames and splints, and who cannot therefore be given a shower bath, are rubbed down.

The total number of patients discharged, or completing treatment, during 1926, was eighty-eight. This number included thirty-three male adults, twenty-seven female adults and twenty-eight children. Of the eighty-eight patients, seventy-five completed a satisfactory course of treatment, seven of which have since died. Thirteen failed to complete a satisfactory course of treatment, and of this number three have died.

Of those who completed a satisfactory course of treatment during the year, twenty-two were cases of bone and joint tuberculous, six were cases of abdominal tuberculosis, and twenty-one were cases of peripheral adenitis, and the remaining twenty-six were suffering from tuberculosis in other organs.

In a majority of instances our patients received artificial light treatment and sanatorium treatment concurrently. Many patients after discharge from the sanatorium continued to attend the Light Clinic as out-patients.

The earlier in the course of tuberculous disease, ultra-violet irradiation is commenced, and the longer it is continued, the better will be the results obtained.. It is an advantage too, if the initial period of artificial light treatment is associated with sanatorium treatment. In most instances of tuberculous disease, a course of artificial light treatment extending over a period of less than six months will, as a rule, not produce satisfactory results. In many instances treatment must be continued for eighteen months and two years, when exposures are given on alternate days.

The average length of time during which our " completed " patients received artificial light treatment was approximately twenty-nine and a half weeks. The average number of exposures was approximately ninety-seven and the average gain in weight in each case was six and a quarter pounds.

The patients who discontinued treatment for various reasons numbered thirteen. They included cases of spinal caries, laryngitis, lupus and cervical adenitis, and a tuberculous ulceration of the palate and pharynx. The majority were cases of longstanding and fairly extensive disease.

On December 31st, 1926, one hundred and twelve were continuing their treatment in the Light Clinic. This number included patients suffering from bone and joint tuberculosis, tuberculous adenitis, and laryngitis, lupus and abdominal tuberculosis, most of which are making progress.

A number of our patients whose lesion was a local one, viz., cases of lupus and superficial tuberculous ulcerations and sinuses, in addition to irradiation of the surface of the body by means of the " general bath " received local applications of artificial light from a tungsten and carbon arc lamp.

In many obstinate cases of lupus, etc., healing is achieved with less delay than when artificial light is applied by the general bath only.

The photographs following page 96 illustrate the progress made and results obtained in two cases of lupus after artificial light treatment. The other photographs are those of a small boy who was admitted when gravely ill, suffering from abdominal tuberculosis. This patient had been operated upon, and presented an abdominal fistula through which faecal material was discharging. After a period of sanatorium and artificial light treatment the sinus healed and the child is now well.

VENEREAL DISEASES.

In 1916 the Royal Commission appointed in November, 1913, issued its report, and among other recommendations this Commission advised that measures should be taken to render the best modern treatment of Venereal Diseases available for the whole community and that these arrangements should be of such a nature that persons affected would have no hesitation in taking advantage of them.

They further recommended that the organisation of these measures should be in the hands of local authorities and that as far as possible they should be provided at General Hospitals. Many other detailed recommendations were made, including a recommendation that the British Social Hygiene Council should be recognised by Government as an authoritative body for the purpose of spreading knowledge and giving advice in regard to the question of these diseases in their varied aspects.

Since the Commission reported, the Venereal Diseases Act was passed in 1917, the chief provisions of which are the prevention of, treatment of Venereal Diseases otherwise than by duly qualified persons, and the restrictions on the advertising of remedies, etc.

Treatment was commenced in Birmingham in 1918, and has been continued up to the present time. The number of cases coming up for treatment in no wise represents the number of persons actually infected, because any qualified medical practitioner is permitted to treat such cases, and it is well known that persons living in Birmingham apply for treatment at Centres outside the City, while even a greater number of persons residing outside the City apply for treatment at the Centres inside. The figures given in this report, therefore, do not indicate the total volume of disease, but merely the relative number of cases occurring year by year.

The following table shows the total number of new cases of Syphilis and Gonorrhœa treated each year since 1918:—

	New cases of Syphilis.				New cases of Gonorrhœa.			
Year.	Male.	Female.	Babies.	Total.	Male.	Female.	Babies.	Total.
1918	502	355	—	857	588	100	—	688
1919	782	459	—	1,241	1,399	187	—	1,586
1920	704	441	—	1,145	1,190	185	—	1,375
1921	423	343	—	766	825	131	—	956
1922	220	237	—	457	628	83	—	711
1923	296	239	—	535	666	89	—	755
1924	291	301	18	610	691	73	5	769
1925	277	240	23	540	667	220	5	892
1926	231	270	43	544	692	185	7	884

Note.—About 90 per cent. of these cases are Birmingham residents.

The Clinics at which these persons were treated in 1926 were as follows:—

	New cases of Syphilis	New cases of Gonorrhœa.	Total new cases.	Total attendances.
General Hospital (for men and women)	386	754	1,140	44,587
Children's Hospital (for children only)	19	3	22	331
Aston Street Clinic (for mothers and babies)	139	127	266	3,139

Particulars of the cases treated during 1926 are given below:—

	Syphilis.				Gonorrhœa.			
	Males.	Females.	Babies.	Total	Males.	Females.	Babies.	Total
Total number of new cases	231	270	43	544	692	185	7	884
Total number of attendances	7,545	7,308	289	15,142	28,740	3,891	284	32,915
Aggregate number of in-patient days	166	507	—	673	400	936	—	1,336
Ceased attendance before completion of treatment	114	76	—	190	210	49	—	259
Ceased attendance after completion of treatment, but before final tests	31	20	—	51	171	19	—	190
Transferred to other Centres or died after treatment	6	9	—	15	19	9	—	28
Discharged after completion of treatment and observation	21	21	—	42	110	28	2	140
Number of patients under treatment or observation on January 1st, 1927	344	288	65	697	760	237	14	1,011

The cost of Venereal Disease treatment and prevention during 1926 was as follows:—

COST OF VENEREAL DISEASES SCHEME FOR YEAR ENDING 31ST DECEMBER, 1926.

	£	s.	d.
General Hospital Clinic	3,706	17	5
Children's Hospital Clinic	111	18	0
Aston Street Clinic	855	17	9
Cleveland House, Wolverhampton, Clinic	93	19	11
Cost of Salvarsan	920	2	6
Bacteriological Laboratory	686	12	6
Grant, British Social Hygiene, B'ham Branch	250	0	0
Stationery and other expenses	126	9	9
	£6,751	17	10

Detailed Expenditure of Clinics, Year, 1926.

	General Hospital £ s. d.	Children's Hospital. £ s. d.	Aston Street Clinic. £ s. d.
Medical Officers	1,363 2 11	88 4 0	308 14 0
Salaries of Orderlies, Nurses, etc.	809 11 9		261 18 8
Clerical & Administrative Salaries	222 8 11		—
Provision for Officers	189 17 0		—
Rent, Rates, Taxes, Light, etc. ...	206 4 5		94 19 11
Drugs	463 5 3		
Dressings	52 4 3	23 14 0	146 6 6
Apparatus	109 19 4		
In-Patient Days	147 7 0		—
Stationery, Printing, etc. ...	41 10 6		—
Laundry (Officers)	41 4 11		20 2 7
Building Alterations	—		14 9 3
Furniture	20 16 10		2 0 2
Employers' Liability Insurance ...	9 15 1		—
Sundries	29 9 3		7 6 8
	£3,706 17 5	£111 18 0	£855 17 9

Dr. Eric Assinder, Director of the Venereal Diseases Department at the General Hospital, was appointed as an Assistant Medical Officer of Health for Venereal Diseases, and he has submitted the following report on the clinical work done during the year by himself, and his assistants, by Dr. Shufflebotham at the Aston Street Clinic, and by Dr. Braid at the Children's Hospital Clinic:

SUPPLEMENTARY REPORT ON VENEREAL DISEASES IN BIRMINGHAM FOR 1926.

During 1926 there were three centres working under the Public Health Authorities in Birmingham:—

i. At the General Hospital (total attendances, 45,281).
ii. At Aston Street Clinic (total attendances, 3,371).
iii. At the Children's Hospital (total attendances, 438).

These figures include a few cases which were suffering from Soft Chancre and a rather larger number which were not suffering from Venereal Disease.

Our aim at each of these Centres has been to secure early and efficient treatment; these two factors are, I believe, the key to the proper treatment of both Syphilis and Gonorrhœa; we are obviously dependent upon both the patient and the General Practitioner, to a very large extent, in securing early treatment for the infected Patient.

From observation it would seem that probably every case of Primary Syphilis, who attends the Clinics early and attends regularly, is practically assured of a complete cure, due to the remarkable efficiency of the "Salvarsan" compounds. The results in cases of acute gonorrhœa who present themselves for treatment early, and carry out directions conscientiously are also extremely good if not quite so certain as those of Primary Syphilis.

To give efficient treatment I have tried to arrange hours of Clinics to suit the Patients so that they may attend at times which interfere with work as little as possible; thus the Clinics have been increased in numbers, and the times are later than in 1924.

The result at the Clinics has been a great increase in the number of attendances. This is not so much due to a greater number of new cases as to much better attendances. Thus in two years, 1925-1926, at the General Hospital Clinic, there has been an increase in the number of attendances of 10,000, over the 1924 returns, and probably 1927 will show an even greater increase.

Another point which has somewhat increased the attendances has been co-operation between infected individuals—infected patients are urged to persuade "contacts" to attend and are given cards for such contacts to attend at a particular time to see the doctor.

Patients are also encouraged to bring their children for examination where it is possible that they may have inherited venereal disease.

New Method of Treatment.

I may perhaps refer to two new methods of treatment adopted at the General Hospital:—

i. Treatment by Diathermy.
ii. Treatment by intravenous vaccines.

i. Diathermy, a treatment by raising the temperature of the tissues by passages of a current of heat through an affected part, has been used in the department for the past fifteen months. During 1926, 739 treatments were given (mainly by Dr. MacDonald). Many of the results in female cases of gonorrhœa have been very encouraging at any rate as an adjunct to routine treatment. Male cases have not at present met with much success, but probably further research in methods of application and duration of exposure to the raised temperature will give better results. It must be understood that diathermy for each individual treated involves much time, the minimum being half an hour for each patient, so that such a form of treatment cannot be used on a large scale.

ii. Treatment by intravenous injections of vaccines. Every case of acute gonorrhœa who presents himself at the Clinic is now given a course of intravenous injections of vaccine. In 1926 there were 393 cases of men who attended and each was treated in this way, in addition to the routine irrigation, etc. The results have been extraordinarily good and I propose to continue to give these injections as a routine measure. In my opinion one of the great considerations in the treatment of gonorrhœa is the liability of the patient to permanent damage to important structures, I believe that by early vaccine treatment, especially intravenous vaccine, much permanent damage is avoided.

Difficulties.

The great difficulty at the General Hospital is lack of proper accommodation. It is quite impossible to perform our duties properly in the present circumstances and I am hopeful that before very long these conditions will be remedied.

A second difficulty has been the non-attendances of Women Patients. I understand that this is the case all over the country. At the General Hospital the total attendances for Women with gonorrhœa was 2,568, compared with 28,740 male attendances.

Miss Shufflebotham's Aston Street Clinic (with a total attendance of 3,371), of course, alters the proportion somewhat, but only to a very slight degree. I am convinced that many women who are suffering from gonorrhœa have no idea of the fact; at the same time I am sure that a much larger number ought to be treated by proper up-to-date methods such as can be only obtained at a V.D. centre.

Number of Centres.

The policy of the Ministry of Health in encouraging few, rather than many centres, is a matter which I should like to mention. Without entering into the question of greater efficiency at the larger centres, it has been apparent to me that when a whole family is affected, as is not infrequently the case, it is often found to be well nigh impossible for the mother and children to attend different centres at different times during the week owing to the large amount of time involved.

The Aston Street Clinic, no doubt, serves a very useful purpose, but I am not convinced that the Children's Hospital Clinic would not serve its purpose better if it were transferred to the main centre at the General Hospital.

The following is a list of the Clinics for the treatment of Venereal Disease:—

THE GENERAL HOSPITAL, BIRMINGHAM.

Men.	**Clinic Hours.**
Monday Tuesday Wednesday Thursday Friday	... 5.15 p.m.—7-15 p.m.
Wednesday Monday	... 10.0 a.m.—12.0 noon.

Men.	**Intermediate Treatment.**
Monday ...	9 a.m.—8 p.m.
Tuesday ...	2 p.m.—8 p.m.
Wednesday ...	9 a.m.—8 p.m.
Thursday ...	2 p.m.—8 p.m.
Friday ...	9 a.m.—8 p.m.
Saturday ...	9 a.m.—2 p.m.
Sunday ...	10 a.m.—1 p.m.

Diathermy.	**Men.**
Wednesday ...	3 p.m.—5 p.m.
Saturday ...	10 a.m.—1 p.m.

Women.	**Clinic Hours.**
Tuesday Friday	... 10.0 a.m.—12.0 noon.
Thursday	... 5.15 p.m.—7.15 p.m.

Women.	**Intermediate Treatment.**
Monday	9.30—11 a.m. 1—3 p.m.
Tuesday	1—3 p.m.
Thursday	1—3 p.m.
Friday	1—3 p.m.

Children.	**Clinic Hours.**
Tuesday Friday	... ... 4.30 p.m.

Diathermy Treatment.	**Women.**
Tuesday	10—1 p.m.
Thursday	10—1 p.m.

Maternity and Child Welfare Clinic, No. 10a, Aston Street, for Women and Children.

Monday	5.30 p.m.—7.30 p.m.
Wednesday ...	10.0 a.m.—12.0 noon.
Friday	10.0 a.m.—12.0 noon.

Intermediate treatment daily by appointment.

Children's Hospital, Ladywood Road, for Children.

Friday	3 p.m.

VII.—MATERNITY AND CHILD WELFARE.

INFANT MORTALITY.

There has been a very satisfactory drop in Infant Mortality in Birmingham during recent years. For the past eight years it has averaged 80.2 per 1,000 infants born, and has varied from 72 to 86 per 1,000.

INFANT MORTALITY RATE.

	Birmingham.	England and Wales.
1901-05	157	138
1906-10	131	117
1911-15	126	110
1916-20	94	91
1921-25	80	76
1916	104	91
1917	101	96
1918	99	97
1919	84	89
1920	83	80
1921	83	83
1922	86	77
1923	72	69
1924	83	75
1925	78	75
1926	73	70

The figures below show the extent of the decrease in mortality in different sections of the first year of life.

INFANT DEATHS TO 1,000 BIRTHS.

	Under one month.	One to three months.	Three to six months.	Six to nine months.	Nine to twelve months.	Total
1906-10 ...	40.7	27.4	26.5	20.2	16.3	131
1911-15 ...	41.3	24.2	23.4	20.3	17.0	126
1916-20 ...	36.3	17.4	16.0	12.9	11.7	94
1921-25 ...	33.5	13.7	12.7	10.2	10.3	80
Decrease	18%	50%	52%	50%	37%	39%

Comparatively speaking the deaths in the first month show only a small decrease. If the deaths in this first month of life are further divided up according to weeks the figures obtained are as follows:—

	First week.	Second week.	Third week.	Fourth week.
1906-10	24.0	6.2	6.2	4.4
1911-15	24.8	5.9	6.2	4.5
1916-20	23.4	5.1	4.6	3.2
1921-25	21.6	4.9	4.1	2.8
Decrease	10%	21%	34%	36%

These figures show that in the first week of life and to a smaller extent in the second week the fall in mortality has been comparatively small, while at the other ages it has varied from 34% to 52%. It is a startling fact that one-fourth of the total infant mortality occurs within seven days of birth, and it is at this period that the smallest reduction in mortality is taking place.

It must be remembered also that in addition to the deaths occurring almost immediately after birth there are also some hundreds of babies born dead. Indeed the stillbirths greatly outnumber the deaths which occur soon after birth.

Last year there were 585 stillbirths, while the deaths in the first week of life amounted to only 359, and in the second week to 93.

The next Table shows for each ward of the City the total number during the past three years of babies who were either stillborn or who died within a week of birth.

	Ward	Stillbirths and Deaths under one week.	Rate per 1,000 live and still births.
Central Wards	St. Pauls	120	47.0
	St. Marys	169	57.0
	Duddeston and Nechells	175	48.0
	St. Bartholomews	152	48.0
	St. Martins and Deritend	192	56.7
	Market Hall	54	47.5
	Ladywood	115	54.2
Middle Ring	Lozells	105	57.5
	Aston	157	55.2
	Washwood Heath	140	55.3
	Saltley	124	57.7
	Small Heath	76	50.8
	Sparkbrook	117	62.4
	Balsall Heath	94	44.7
	Edgbaston	71	51.2
	Rotton Park	110	44.4
	All Saints	131	48.4
Outer Ring	Soho	77	58.2
	Sandwell	51	62.4
	Handsworth	69	63.1
	Erdington North	81	54.5
	Erdington South	56	49.7
	Yardley	49	51.1
	Acocks Green	73	43.6
	Sparkhill	83	51.5
	Moseley and Kings Heath	51	43.4
	Selly Oak	47	33.5
	Kings Norton	60	55.0
	Northfield	28	50.1
	Harborne	42	63.6

From the above Table it would appear that whatever is the cause of this heavy loss of life it is not dependent on social conditions, being as high in the best wards of the City as it is in the poorest areas.

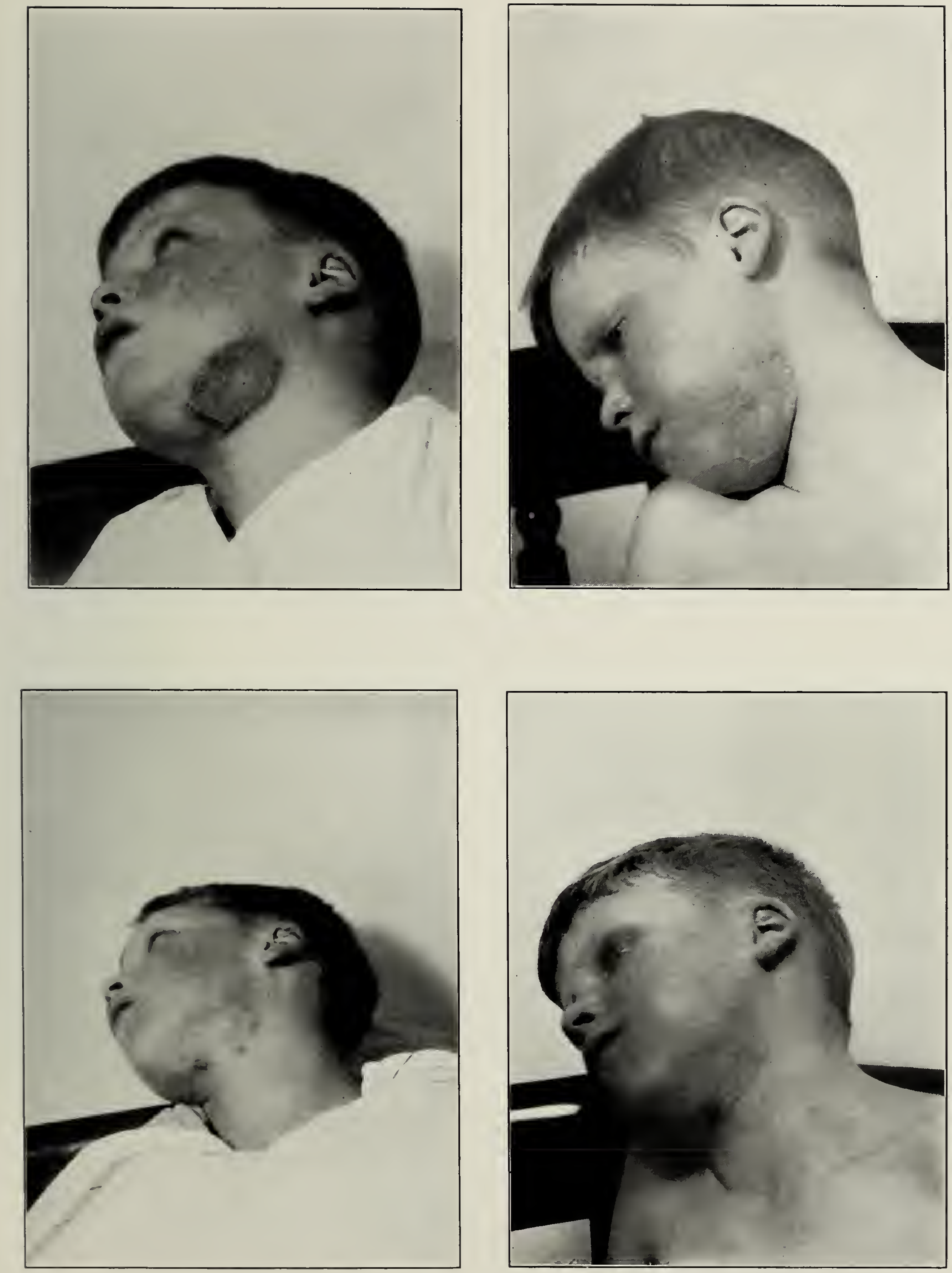
The causes of death of the 359 infants who died last year within a week of their birth were as follows :—

Prematurity	218
Debility	40
Malformations	29
Injury at Birth	20
Atelectasis	17
Other causes	35

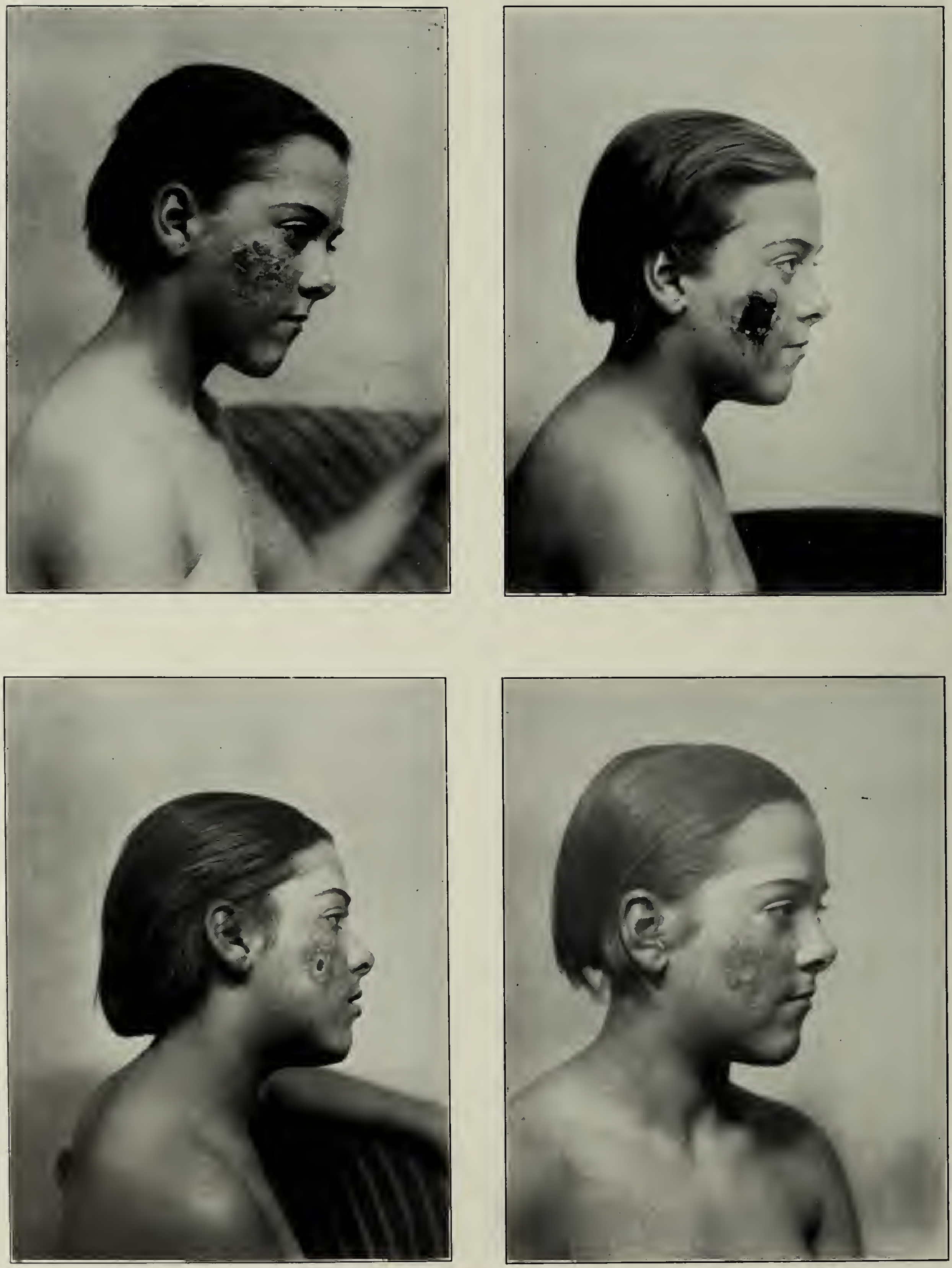
Distribution of Infant Mortality.

The appended table shows the infant mortality rate in each of the wards of the City in 1926.

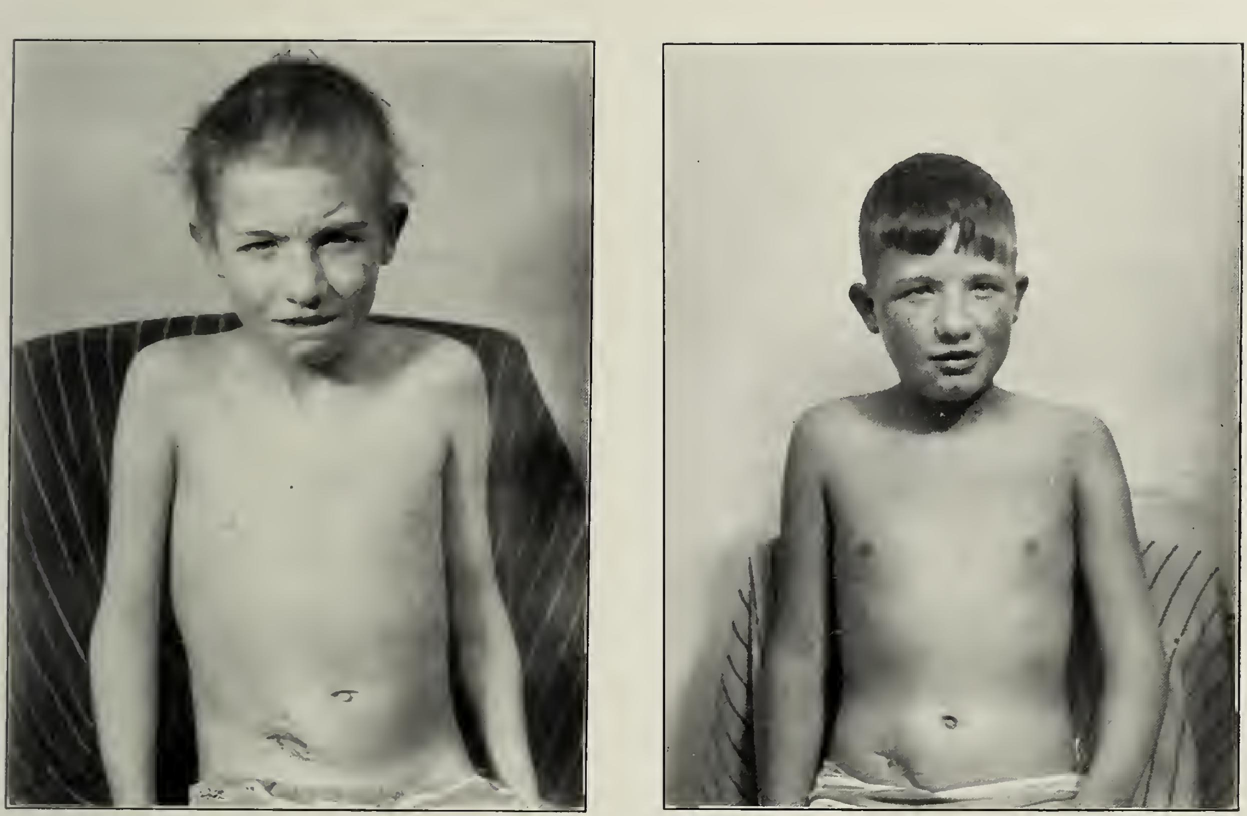
		1926	
Central Wards :	St. Paul's	106	Average 97
	St. Mary's	122	
	Duddeston and Nechells	79	
	St. Bartholomew's	98	
	St. Martin's and Deritend	86	
	Market Hall	106	
	Ladywood	81	
Middle Ring :	Lozells	52	Average 59
	Aston	77	
	Washwood Heath	66	
	Saltley	43	
	Small Heath	48	
	Sparkbrook	70	
	Balsall Heath	52	
	Edgbaston	59	
	Rotton Park	63	
	All Saints	65	



The above photographs show the progress and result of artificial light treatment in a case of Lupus of the neck



The above photographs show the progress and result of artificial light treatment in a case of Lupus of the face



The above photographs show the result of treatment by artificial light in a case of abdominal tuberculosis with discharging fistula.

Outer Ring:	Soho	76	Average 65
	Sandwell	98	
	Handsworth	53	
	Erdington North	46	
	Erdington South	52	
	Yardley	56	
	Acocks Green	48	
	Sparkhill	70	
	Moseley and King's Heath	54	
	Selly Oak	69	
	King's Norton	65	
	Northfield	68	
	Harborne	90	

The next statement shows the contrast between the best and the worst ward:—

	Population.	Birthrate.	Infant Mortality Rate.
Saltley Ward (the best)	39,224	19.8	43
St. Mary's Ward (the worst)	33,645	27.8	122

In the next table the infant mortality in Birmingham is shown as compared with that in other great towns.

Infant Mortality in Other Towns.

(*Registrar General's Figures*).

Glasgow	104
Birmingham	70
Liverpool	103
Manchester	83
Sheffield	78
Leeds	87
Bristol	68
Edinburgh	80

The next table shows how the mortality was distributed over various causes of death and over different age periods under 1 year of age.

Infantile Mortality by Age and Cause.

Deaths from stated Causes in Weeks and Months under One Year of Age.

Cause of Death.	Weeks.				Total under One Month.	Months.				Total Deaths under One Year.
	0—	1—	2—	3—		1—	3—	6—	9—	
Measles	—	—	1	—	1	—	1	6	13	21
Scarlet Fever	—	—	—	—	—	—	—	—	—	—
Whooping Cough	—	—	—	3	3	17	11	12	18	61
Diphtheria and Croup	—	—	—	—	—	1	1	1	1	4
Influenza	—	—	—	—	—	1	1	—	2	4
Tuberculous Meningitis	1	—	—	—	1	2	1	5	2	11
Abdominal Tuberculosis	—	—	—	—	—	—	1	—	1	2
Other Tuberculous Diseases	—	—	—	—	—	—	2	—	4	6
Rickets	—	—	—	—	—	—	—	—	3	3
Syphilis	2	—	2	—	4	—	2	—	1	7
Cerebro-Spinal Fever	—	—	—	—	—	—	4	—	—	4
Meningitis (not Tuberculous)	—	—	—	—	—	—	1	3	5	9
Convulsions	10	2	3	2	17	8	8	1	2	36
Bronchitis	—	4	3	6	13	19	9	12	14	67
Pneumonia (all forms)	2	7	7	2	18	32	54	56	67	227
Gastritis	—	1	—	—	1	5	2	—	3	11
Diarrhoea, Enteritis, etc.	2	2	6	3	13	34	53	39	23	162
Congenital Malformations	29	14	4	2	49	17	9	4	—	79
Premature Birth	218	39	20	14	291	33	2	—	—	326
Atrophy, Debility and Marasmus	40	11	5	12	68	23	17	3	2	113
Atelectasis	17	1	—	—	18	1	—	—	—	19
Injury at Birth	20	2	—	1	23	2	—	—	—	25
Neglect (under 3 months)	7	—	—	—	7	—	—	—	—	7
Suffocation (overlying)	1	2	—	3	6	10	8	—	—	24
Other Causes	10	8	4	2	24	9	16	14	10	73
All Causes	359	93	55	50	557	214	203	156	171	1,301
Rate per 1,000 Births	20.0	5.2	3.1	2.8	31.1	11.9	11.3	8.7	9.5	73

INFANTILE DIARRHŒA AND ENTERITIS.

There were 201 deaths from diarrhœal disease under two years of age.

The deaths in previous years with comparative meteorological data are shown in the next table.

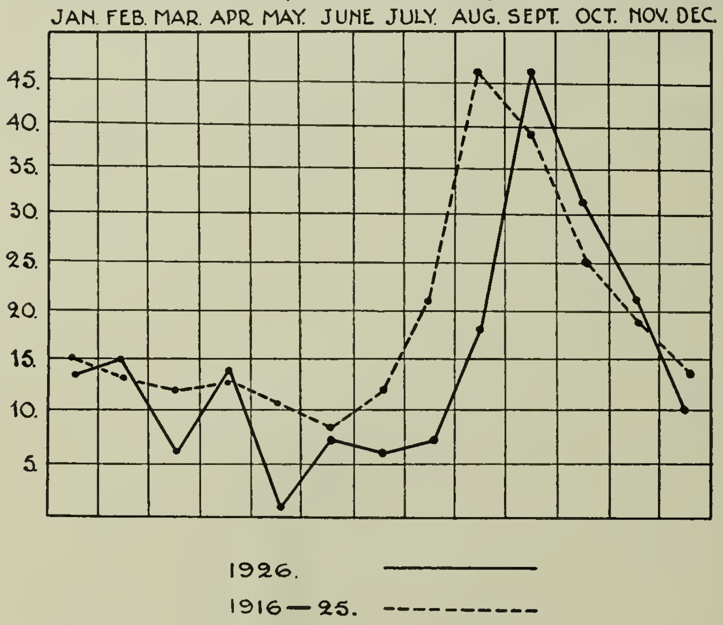
	Deaths from Diarrhœa and Enteritis. Under 2 years	Death-rate per 1,000. births	Highest Temp. of the Air.*	Days with Temp. of 75 Fahr. or over.*	Maximum Soil Temperature (4ft.)*	Amount of Rain in inches.*	Days with 0.01 or more of Rain.*
1916 ...	380	18.4	82.1	14	54.8	5.42	36
1917 ...	266	15.0	78.4	5	54.0	9.74	55
1918 ...	311	18.5	81.3	13	55.9	9.83	54
1919 ...	191	9.9	83.0	12	55.0	8.44	39
1920 ...	237	9.5	73.0	0	53.0	7.59	53
1921 ...	367	16.6	89.2	27	57.0	5.54	27
1922 ...	169	8.5	71.5	0	52.8	13.45	55
1923 ...	207	10.9	91.9	15	54.2	9.50	49
1924 ...	170	9.2	84.5	2	53.0	10.33	63
1925 ...	201	11.3	85.7	12	55.0	9.97	46
1926 ...	201	11.2	83.0	13	55.2	4.85	36

The diarrhœa rates in different areas in 1926 was as follows:—

Central Wards	... ...	20.4 per 1,000 deaths.
Middle Ring	... ...	6.6 ,,
Outer Ring	... ...	6.5 ,,

The distribution of the deaths throughout the year is shown in the diagram below:—

DEATHS FROM DIARRHŒA & ENTERITIS, IN FOUR-WEEKLY PERIODS.
(UNDER 2 YEARS.)



STILLBIRTHS.

There were 585 stillbirths notified in 1926 against 609 in 1925, 544 in 1924, and 629 in 1923. In a few cases the cause of stillbirth is obvious, and preventable by treatment of the mother during pregnancy. In the majority of cases the cause is one which it is difficult or impossible to anticipate, and one which in many cases is not preventable even if anticipated.

CHILD MORTALITY.

The deaths of children between the ages of one and five years numbered 570 during 1926, as compared with 755 in 1925 and 795 in 1924. The fall in the number is due to the fact that the incidence of some of the acute infections was not as great in 1926 as formerly.

---

* In the third quarter of the year.

The causes of death were as follows :—

Measles	55
Whooping Cough	59
Diphtheria	43
Scarlet Fever	3
Tuberculosis	51
Bronchitis and Pneumonia	195
Diarrhœa and Enteritis	45
Burns	11
All other causes	108

Most of these deaths are preventable. This group ought to be reduced to one-fourth of what it is at present if due care and intelligence were exercised by the parents.

CHILD WELFARE CENTRES.

The scheme for promoting child welfare—which included the prevention of mortality and illness among children up to five years of age and the securing of the best possible degree of health for the surviving children—has grown from small beginnings 25 years ago to a large and expensive branch of the work of the municipality. There is now a well-recognised acceptance by the whole community of the fact that every endeavour should be made to give the rising generation the best health possible.

At the present time there is expended on this work over £60,000 a year, and much more could be usefully expended were the money available for this purpose.

The really effective work and that which has given the best results depends on the giving of good information to the mothers as to what they should do for their children. It is found that practically all mothers are very anxious to know what is best to do for their children, that is to say, they are willing and receptive pupils. It is essential that the advice to be given should be sound and that it should be given by one who can give it with authority and sympathy. For a certain number of cases this is best done by a doctor, and in other cases it can be done by a well-trained nurse.

The staff dealing with this part of the work is as follows :—

Assistant Medical Officer of Health	1
Medical Officers for Child Welfare (whole time)	5
Medical Officers ,, ,, ,, (part time)	21
Whole time Infant Visitors	74
Cookery Mistresses	2
Sewing Mistresses	6
Nurses, Carnegie Institute	8
Maids, Carnegie Institute	8
Part time Dentists	2
Part time Radiologist	1
Clerical Staff	4
Caretakers, Porters, etc.	34

The scope of the work done by these officers is indicated in the next statement.

Centres	Weekly Number of :—								
	Clinics for Infants and " Toddlers."	Weighing Days.	Ante-Natal Clinics.	Sewing Classes.	Cookery Classes.	Housekeeping and Mothercraft Classes.	Dental Clinics.	Radiological Clinics.	Test-Feeding Clinics.
Aston Street	3	—	1	1	—	—	—	—	—
Berkeley Road, Hay Mills	3	1	1	1	—	—	—	—	—
Bloomsbury Street	3	—	2	1	—	—	—	—	—
Bristol Road South, Northfield	1	1	1	1	1	—	—	—	—
Carnegie Institute	4	—	2 Per month	1 Summer	1 Winter	1	4	1	2
College Road, Perry Common	2	—	1	1	—	—	—	—	—
Floodgate Street, River Street,	2	—	1	1	1	—	—	—	—
Harborne Lane, Selly Oak	1	2	2 Per month	1	—	—	—	—	—
Holyhead Road, Handsworth	2	1	2 Per month	1	—	—	—	—	—
Hope Street	3	1	1	1	—	—	—	—	—
Irving Street	2	1	1 Per month	1	—	—	—	—	—
Lansdowne Street, Winson Green	4	—	1	1	—	—	—	—	—
Lea House Road, Stirchley	1	1	2 Per month	1	—	1	—	—	—
Lichfield Road	4	—	1	1	—	—	—	—	—
Poplar Road, King's Heath	2	—	1	1	—	—	—	—	—
Pype Hayes	1	—	2 Per month	—	—	—	—	—	—
St. Vincent Street	3	1	1	1	—	—	—	—	—
Shortheath Road, Erdington	2	—	2 Per month	1	—	—	—	—	—
Smith Street	3	—	2	1	1	—	—	—	—
Stratford Road	4	—	1	—	1	—	—	—	—
Trinity Road	2	2	1	1	—	1	—	—	—
Warwick Road, Greet	2	1	1	1	—	—	—	—	—
Washwood Heath Road	4	1	2	—	1	—	—	—	—
Wentworth Road, Harborne	2	—	2	—	—	—	—	—	—
Wright Street	2	—	1 Per month	1	—	—	—	—	—
TOTAL	62	13	24	20	5	3	4	1	2

In addition to the work done at these Centres visits are paid to the homes of about 85 per cent. of the babies born during any year, and these visits are repeated in certain cases at frequent intervals, in other cases less frequently according to the needs of the infants.

The actual work done in connection with these centres is indicated in the large table on page 101.

Maternity and Child Welfare Centres—Year 1926.

	Aston St.	Berkeley Rd., Hay Mills.	Bloomsbury St.	Bristol Road South, Northfield.	Carnegie Institute.	Floodgate St. (River St.)	Harborne Lane, Selly Oak.	Holyhead Road, Handsworth.	Hope St.	Irving St.	Lansdowne St., Winson Green.	Lea House Road, Stirchley.	Lichfield Rd.	St. Vincent St.	Short Heath Rd., Erdington.	Smith St.	Stratford Rd.	Trinity Rd.	Warwick Rd., Greet.	Washwood Heath Rd.	Wentworth Rd., Harborne.	Wright St.	King's Heath (Opened Nov. 1st).	Perry Common, (Opened Sep. 13th)	Pype Hayes, (Opened Nov. 1st).	Total.
Infants and Children:—																										
Births (and stillbirths) reported	732	480	1128	170	1029	559	382	480	882	654	825	395	1001	849	519	1001	969	573	515	882	226	982	87	98	—	15418
Primary visits ...	768	523	1029	151	991	555	339	484	906	709	817	448	1070	869	455	1114	1010	530	526	878	221	1013	111	109	—	15626
Re-visits (infants and children)	10773	6575	15051	2468	16101	7617	5252	9375	14014	10926	13598	5477	18029	16308	5280	16125	15540	4272	6500	13231	4118	13778	1265	1968	—	233641
Total visits & revisits	11541	7098	16080	2619	17092	8172	5591	9859	14920	11635	14415	5925	19099	17177	5735	17239	16550	4802	7026	14109	4339	14791	1376	2077	—	249267
Mothers:—																										
Primary visits ...	129	94	72	39	120	86	111	157	221	140	288	51	93	67	158	63	215	55	114	236	53	67	36	57	—	2722
Re-visits	162	133	150	60	204	181	102	281	263	82	315	33	70	144	114	143	169	42	79	186	186	209	1	12	—	3321
Total visits & re-visits	291	227	222	99	324	267	213	438	484	222	603	84	163	211	272	206	384	97	193	422	239	276	37	69	—	6043
Children's Consultations:																										
Number held	145	96	146	48	192	97	50	96	191	98	193	50	194	148	96	172	196	96	99	196	96	98	10	20	8	2831
Fresh children attend'g	580	391	746	89	1510	462	228	372	683	564	608	255	1024	617	596	890	938	523	536	816	176	541	178	288	36	13647
Total attendances ...	7493	3997	6686	949	12734	4191	2300	5382	6359	5068	6987	2109	11793	6545	4772	9494	8094	3811	4935	9417	3113	6024	365	706	85	133409
Number seen by Doctor	3574	2364	3088	833	6036	1329	1338	1509	3915	2602	3788	1270	5079	3466	2258	3751	3907	2264	2543	4320	1548	2927	194	415	61	64379
Mothers' Consultations:																										
Number held	48	24	83	11	146	48	24	22	48	12	50	25	49	48	50	100	48	48	48	96	22	50	5	6	6	1117
Fresh mothers attend'g																										
Ante-Natal ...	234	127	357	33	651	252	74	65	173	60	179	83	384	128	245	369	237	109	213	310	55	247	6	33	6	4630
Post-Natal ...	24	12	27	7	52	36	3	23	23	10	31	24	101	72	62	80	31	48	19	137	10	57	3	5	1	898
Total attendances ...	556	271	736	110	1832	664	280	149	445	130	466	271	815	457	726	886	523	375	597	958	175	554	10	44	13	12043
Attendance at:—																										
Sewing classes ...	786	1175	704	188	525	731	722	736	814	514	644	525	571	452	270	503	5	731	790	196	295	841	—	47	—	12765
Cookery classes ...	—	—	—	456	699	118	—	—	—	—	—	—	—	—	—	530	613	64	—	154	—	—	—	—	—	2634
Health Talks	3286	1951	1102	366	6856	2071	554	1572	773	1104	3526	2544	1099	735	2457	1834	1247	567	380	893	244	2045	29	35	—	37270

WALKER MOTHERCRAFT SHIELD COMPETITION.

The first competition for the Walker Shield was held during the year, the detailed conditions being as follows :—

Every Centre can earn 500 marks. All papers and articles will be identified by a *name* or *motto* selected by the Centre, and by a *number* corresponding to the name of the competing mother. Sealed envelopes inscribed with the name or motto and containing the names and numbers must be handed to Miss Baxter on or before December 16th.

Question papers will be given out on December 11th and must not be opened till the day of examination.

All papers and competing articles must be handed in between the 13th and 16th December.

Judging will commence on the 17th December.

Records will be considered during the first week of January.

Further details will be given later.

MOTHERCRAFT PAPERS. 100 marks. 3 Papers.

Subjects.—A. Ante-natal care (mother and child).
B. The care of the young infant (to six months).

Judge.—A woman medical officer for child welfare outside Birmingham.

Text Books.—" Mothercraft," " Wives and Mothers," " The Expectant Mother," " Infant Hygiene."

PARENTS' WORK SECTION. 150 marks. 3 competitors in each subject. Three subjects.

Sewing.—1. Reconstructed garment. 2. Set of sewing samples. 3. New garment. One each.

Knitting.—Child's coat or child's dress or child's jumper or jersey suit or overalls (legerettes).

Cookery.—Any dish cooked at home suitable for a family. Total cost not to exceed 2/6.

General Housewifery.

I. Paper. Question (a) Laundry. (b) The Bedroom.

II. Family Budget. Four weeks period, stating amount to be expended and the size of family. The best value for the money will be the test.

Competitors must do both I. and II.

FATHER'S WORK. Any home-made article of use to the family.

Judges will be requested from the Education Department.

REGULARITY OF ATTENDANCE. 100 marks.

This will be judged in groups for each year from attendance registers.

1. Over 20 attendances.
2. 10-20 attendances.
3. 5-10 attendances.
4. 3-5 attendances.
5. Under 3 attendances.

Figures to be supplied by senior visitors.

Judge to be selected from outside the Department.

RECORD KEEPING SECTION. 150 marks.

Ante natal attendance. Average in groups, 1926.

1. Over 5 attendances.
2. 3-5 attendances.
3. 2-3 attendances.
4. 1 attendance.

Record Keeping.—Includes all records at Centre and Council House.

Breast Feeding.—Records on 1926 cards. Figures to be obtained by infant visitors for each other.

Judge.—Experienced worker in Public Health Department outside Birmingham.

The competition was won by the Greet Centre with 396 marks, out of a possible 500.

OTHER CHILD WELFARE INSTITUTIONS.

These comprise :—

1. The Carnegie Institute.
2. Witton Babies Hospital.
3. Heathfield Road Maternity Home.
4. The Board of Guardians' Maternity Work.
5. Pype Hayes Convalescent Home.
6. Home Helps.
7. Maternity Feeding Centres.
8. The Supervision of Midwives.

THE CARNEGIE INFANT WELFARE INSTITUTE.

This Institute was presented to the City to demonstrate here by the best methods and under the best conditions what is possible to be done to secure good health for infants and young children.

1. *Ante-natal work.*

It is becoming increasingly well-known that an expectant mother who is examined and properly advised by a well-qualified doctor is more likely to have a safe delivery and a healthy child than one who by reason of modesty does without this help. Fortunately mothers are coming of their own accord or are being sent by doctors and midwives to the Carnegie Institute and other Centres for ante-natal advice. A list of conditions found was published in the Report of 1925. A similar variety of conditions was found during 1926.

The work done during the year was as follows :—

Number of clinics held	... ...	146
Total ante-natal attendances	... ...	1729
Total post-natal attendances	... ...	103
Fresh mothers. Ante-natal	... ...	651
Post-natal	... ...	52
Average attendance	... ...	13
Highest attendance	... ...	30

2. *Infants' and Toddlers' Consultations.*

The object of these is to give instructions to mothers on various matters of feeding and hygiene after having examined the children. These instructions are on the whole well carried out and are in essence a means of educating the mothers in the best methods of bringing up their young children.

The number of consultations held was 192.

The total number of attendances of infants and toddlers was 12,734.

Average number per consultation, 66.

3. *Health Talks.*

During intervals of waiting as many mothers as are available are gathered together for " talks " or short addresses on a great variety of health matters. These talks are given both by experienced workers, and by those who are in training to take up work elsewhere.

The number of such organised " talks " held was 411, at which there were 6,856 attendances, or 16 per address.

4. *Mothercraft Classes.*

Number held, 41. Number of attendances, 1,039.

5. *Sewing Classes.*

Number held, 41. Number of attendances, 525.

6. *Cookery Classes.*

Number held, 37. Number of attendances,699.

7. Special lectures were held as follows :—

Tuesday, January 5th.—" The Health of the Mother." Dr. Hilda Shufflebotham (Hon. Surgeon Maternity Hospital and Women's Hospital).

Monday, February 1st.—" A Visit to America." Dr. Ethel Cassie (Chief Medical Officer Children's Welfare, Birmingham).

Monday, March 1st.—" Varying Types of Character and how they are formed." Miss Lloyd (Assistant Superintendent Carnegie Institute).

Monday, May 3rd.—" The Juvenile Offender." Dr. Hamblin Smith (Medical Officer H.M. Prison, Birmingham).

Monday, June 7th.—" The Ante-Natal Life of the Child." Dr. Humpherson (Assistant Medical Officer for Child Welfare).

Monday, July 5th.—" A Visit to Tasmania and New Zealand " (with Lantern Slides). Mrs. William Cadbury (Chairman of the Voluntary Committee Carnegie Institute).

Monday, October 11th.—" Household Insects." Sir John Robertson, C.M.G., O.B.E., M.D., B.Sc. (Medical Officer of Health, Birmingham). (Lantern Slides).

Monday, November 1st.—" Women's Organised Work." Lady Brooks, C.B.E., J.P.

Monday, December 6th.—" The Diet of the School Child." Dr. Bowes (Assistant Medical Officer of Health, Birmingham).

8. *Dental Clinics.*

The number of clinics held during 1926 was 204.

At these there were 2,943 attendances by mothers and 1,025 by children.

9. *X Ray Clinics.*

There were 45 Clinics held at which the attendances numbered 835.

Very interesting and useful information is being obtained in the investigation as to the diagnostic signs of active rickets. This work, in combination with that at the Light Clinic, has demonstrated that a far larger number of children show signs of early rickets than was realised without the X Ray photograph.

10. *Light Clinics.*

The number of Clinics held was 141 and the total attendances 5,286.

The following report was made at the request of the Ministry of Health on the year's work :—

REPORT ON INVESTIGATION OF ARTIFICIAL LIGHT TREATMENT.

1. Name, qualifications and experience in artificial light treatment of medical officer in charge of the treatment?

Ethel Cassie, M.D., D.P.H.

About 10,000 attendances of patients at Carnegie Infant Welfare Institute and by visits and observations at other clinics.

2. Particulars as to numbers and experience in artificial light therapy of nursing staff?

Miss Exell, Matron of Carnegie Institute.

3. Types of lamps used? Amperage?

Atmospheric mercury vapour, K.B.B.

2 lamps (a) 220 volts, 2.5. After initial increase on starting.
(b) 440 volts, 2.5.

4. Is current used direct or alternating? Voltage?
Continuous.

5. Statement as to diseases treated and grouping of patients according to disease. In the case of tuberculosis, state whether bone and joint tuberculosis, lupus, scrofulodermia or pulmonary tuberculosis.

See list attached.

6. What is the routine course of dosage? Are there any departures from the ordinary routine?
Every patient is tested for skin dose, and from this duration is determined for each case by doctor. Lamps vary in output by use. Uniform distance of lamp from patient 4 feet. Duration varies in practice from a maximum of three minutes in some cases to 20 minutes in others.

7. Average duration of treatment? If necessary, group according to disease treated.

   See note 6.

8. Are the temperature and pulse taken of each patient before and after each treatment? Observations are desirable on this subject and also on any variations noted in blood pressure. If any febrile patients have been treated by the method, their temperature before and after each treatment should be recorded.

   No.

9. Date on which treatment was begun.

   January 1st, 1926—December 31st, 1926.

10. Total number of patients treated.

    313.

11. Weekly record of weights, and, if practicable, of heights of patients in relation to treatment?

    Not taken.

12. Photographic records of patients. X-Ray photographs in the case of patients suffering from rickets or surgical tuberculosis. Photographs of the nude profile before and after treatment are of importance.

    X-Ray photographs are taken of rickets cases before, during treatment, and on recovery.

13. General opinion as to brightness and alertness of patients. If possible, the teacher's views should be obtained as to the mental capacity of children before and after treatment.

    There is obvious improvement, i.e., brightness and alertness in cases after treatment.

14. Observations on the skin. Skin delicate or coarse? Hair dark or fair? Re-actions of skin to light treatment, erythema, and desquamation whether easily produced or not? Pigmentation—light, medium or deep?

    No definite rule as to skin reaction has been arrived at. Brunettes frequently react more readily than blondes. Slight erythemas have been occasionally observed, but no severe case with desquamation. No marked pigmentation has been produced in the cases dealt with, even with prolonged treatment, and in most cases no pigmentation is seen.

15. Effect of light on local lesions?

    Some infantile eczemas benefit materially, but results appear to be variable.

16. Any special improvement noted in particular cases?

    The Rickets cases show the most marked benefit, and debility following infectious diseases give the best results among the debility cases.

17. Average cost of current per hour?

    Large lamp 1.1d. per hour.

    Small lamp 0.6d. per hour.

18. Average cost of each patient's treatment?

    0.3d. per patient per treatment.

CASES TREATED IN 1926.

	No. of cases	Attendances made	Average attendance
Completed Cases:—			
Rickets	117	1847	16
General debility	86	1028	12
Debility after infectious disease	15	185	12
Bronchitis	10	136	13
Catarrhal cases	7	127	18
Eczema	5	62	12
Tubercular Peritonitis	2	86	43
Other causes	7	112	16
Mothers	14	216	15
Still under treatment on Dec. 31st, 1926	50	1237	—
	313	5036	—

GENERAL REMARKS.

The use of this simple form of light treatment has been of the greatest possible value to children, particularly those suffering from Rickets. The X-Ray photographs in these cases show that after six or eight treatments the bones are calcified and appear in the X-Ray photograph to be normal.

There has been no difficulty in getting children treated and no difficulty whatever has been experienced in regard to bad results, because in every case a test is made first of all.

Quite recently, we have put in a similar lamp at the Witton Babies Hospital, College Road, Erdington, and the use of this for patients has caused a remarkable change in the progress made by them, as while formerly they were slow in responding to the ordinary treatment they are now doing so very much more rapidly and are greatly benefited.

11. *Massage and Remedial Exercises Clinics.*

There have been 47 of these Clinics held under an experienced Masseuse, who not only does what is necessary for the infants and children, but demonstrates to other workers what is needed and the methods. Total attendances, 435.

12. *Breast Feeding Clinics.*

In the report of 1925 considerable space was devoted to the work done under this heading. As each mother takes at least one whole day and only a small number can be tested at one time it is impossible to extend the benefits of this work to more than the comparatively few women who cannot properly supply their infants with a sufficient quantity of breast milk.

During the year 329 women were under investigation. Some of these were without breast milk, others had insufficient. In most cases it was possible to increase the supply by the advice given and to restore the milk in cases where it had ceased to flow or was nearly absent.

There were 94 clinics during the year with 659 attendances.

13. *The Observation Ward.*

This ward exists to enable infants to be kept under observation for short periods with a view to determining the conditions producing ill-health and which could not be ascertained so readily without complete control.

During the year 116 babies and 10 mothers with their babies were admitted. These patients were suffering from chronic enteritis, dyspepsia, inadequate breast milk, syphilis, meningitis, severe rickets, pyloric stenosis and other similar conditions.

WITTON BABIES HOSPITAL.

(Report by Dr. Muriel Hartley).

During the year 1926 the same methods of nursing and treating the infants have been continued, the barrier system being conscientiously and successfully practised with gratifying results. The importance of a sufficiently large nursing staff so that each nurse has only a limited number of babies to look after has been clearly demonstrated on several occasions. The progress of the patients is directly proportional to the size of the nursing staff. When short-handed it is sometimes impossible to nurse the infants throughout their feeds and hold their bottles; this frequently results in the food being improperly taken and vomiting results.

The health and work of the nursing staff has been good and the extra work incurred by the commencement of ultra-violet radiation treatment for In-patients and Out-patients has been cheerfully and efficiently performed without any additional help.

The patients have been out on the balcony a great deal, especially the older and stronger ones, and much better progress is made when the weather permits of plenty of time being spent out of doors. Last summer the fly nuisance was not so obvious; as many flies as possible were killed but fly traps were not used.

Unfortunately the Ward had to be closed on two occasions for whooping cough and measles.

As one of the probationers developed whooping cough on January 4th, the ward was in quarantine from January 9th to February 8th on which date it was closed and re-opened the next day. Eight infants were infected and of these seven were nursed in hospital until the acute stage was over, two then being transferred to Selly Oak Hospital and four sent home. One case died (he also suffered from congenital heart disease). Eleven contacts were discharged home.

In August six cases of whooping cough occurred. Five were sent home, and one (who also developed measles) to Lodge Road Hospital. The Ward was closed for four days, September 6th to the 9th, after being in quarantine from August 20th to September 6th. Five of the contacts were re-admitted after fourteen days at home. During the year, two other isolated cases were sent out on suspicion of whooping cough, one having broncho-pneumonia was transferred to Selly Oak Hospital.

On March 28th one infant was transferred to Little Bromwich Hospital suffering from nasal diphtheria. No other cases occurred. One case of congenital syphilis was transferred to Dudley Road Hospital for special treatment, another was to attend the Aston Street Clinic from home.

One case was sent to the Children's Hospital for operation for enlarged tonsils and adenoids and returned the next day. One was sent to the General Hospital for operation for cleft palate after his marasmic condition had been greatly improved. One case of congenital hypertrophic pyloric stenosis was transferred (after eleven days in hospital with marked improvement in his general condition) for operation at the Children's Hospital. One infant was admitted from the Children's Hospital three days after Rammstedt's operation for pyloric stenosis. His mother lived near and attended regularly to feed him, partially at first, the quantity of breast milk increasing considerably; and on his discharge he had made excellent progress and was entirely breast fed.

Full Term Infants under Twelve Months.

Eighty-seven full term infants under twelve mouths were admitted, and of these ten were twins (two pairs and only one twin in six cases). Five were admitted at one month of age, seventeen at two mouths, sixteen at three months, seventeen at four months, eight at five months, nine at six months, five at eight months, two at nine months, four at ten months, and two at eleven months.

A previous history of vomiting was obtained in thirty-eight cases, diarrhœa in twenty-eight, pneumonia in three, bronchitis in nineteen. There were three cases of congenital syphilis, one congenital hypertrophic pyloric stenosis, one cleft palate, three congenital heart disease, one oxycephaly and other deformities, three convalescent from Rammstedt's operation for pyloric stenosis, one convalescent osteomyelitis, one cretin (showing signs on admission at the early age of two and a half months). Clinical signs of rickets were present in two cases at four months, two at six months, one at seven months, five at eight months, one each at nine, ten and eleven months. The X-ray reports obtained were—at eight months two were healing, two normal, one at nine months was healing. The cases at ten and eleven months showed normal bones. Of these cases five had not been breast fed, six breast fed under one month, one under six weeks, and one three months. Of the full-term infants without rickets the absence or very short period of breast feeding is again conspicuous. Of thirty-eight under four months, thirteen had not been breast fed, four only for one week or less, two for two weeks, and six for three weeks. Of thirty admitted at from four to six months of age, eight had not been breast fed, one for two weeks, three for three weeks, and six for four weeks only. Of those from seven to eleven months, the period of breast feeding varied from none in one case to six months.

Various complications occurred while in hospital. Nine cases of pyuria, fifteen otorrhœa, twelve bronchitis, five pneumonia, five furunculosis, fourteen more or less persistent vomiting from pyloric spasm and other cases. Thirty-two had diarrhœa (this including loose dyspeptic stools occurring for short periods only). A few cases who had pyuria on admission very rapidly cleared up, but the others proved very resistent to treatment.

About forty of these infants were given lactified milk. The streptococcus lacticus culture from last year was continued and sub-culturing was practised successfully throughout the year without the occurrence of any contamination. The results from this prove to be better than from any other method of feeding and are very gratifying. The milk is more analagous to breast milk, having a low buffer value allowing higher protein feeding. It is also possible to give more sugar with lactified than with ordinary milk.

In cases without diarrhœa or vomiting on admission diluted full cream lactified milk with dextri-maltose was given, and in the majority of cases the weight soon began to increase and progress was steadily maintained. The caloric value of the food required was found to be from about 60-75 calories per lb. per day.

In those cases with loose stools the progress was necessarily slower, lactified skimmed milk being used, with or without casec. The majority soon responded to this treatment but in some the progress was slow, though experience appears to show that this gives better and more rapid improvement than any other methods, the so-called " period of repair " being much shorter. As soon as the consistency of the stools allowed, dextri-maltose was added.

The majority of the infants take the lactified milk quite readily from the first or at most after two or three feeds, even without sugar. Very little difficulty has been experienced in changing on to ordinary milk or dried milk prior to discharge from hospital. In some cases loose stools occurred but soon righted themselves except in a few who were put back on the lactified milk for a little longer, the next attempt at giving cow's milk giving no trouble.

Lactalbumin made at the Children's Hospital was given with good results in three cases.

Premature Infants.

Thirty-two cases under twelve months were admitted. Of these fourteen were twins—in five cases, both were admitted, in four cases only one twin was admitted. Twenty-three were under six months. There was only one admission under one month—weight 2-lbs. 9-oz. The condition at birth was very poor, the mother had eclampsia; the baby was not breast fed, collapsed and died one week after admission.

Group 1.—Seven were between one and two months, weighing from two to six pounds. Of these three only were breast fed for two weeks.

Group 2.—Four were between two to three months, weighing 4, 5, 5, 7-lbs. Three breast fed for three weeks or under.

Group 3.—Eight were between three to four months, weighing 4—7-lbs. Six breast fed for 1½—4 weeks only.

Group 4.—Two were between four to five months (4-lbs., 8-lbs.). Breast fed one month.

Group 5.—One was five months, weight 7-lbs. Breast fed two weeks.

In eleven cases there was vomiting, seven had diarrhœa, three bronchitis, and one congenital heart disease. Four showed evidence of rickets (at 3, 4 and 5 months). After admission six continued to vomit for a time, nine had dyspeptic stools, one bronchitis, one otorrhœa, one pneumonia.

Of Group 1, one died the day after admission. The other six were discharged in good condition, all gaining weight satisfactorily on lactic acid milk. In some cases initial progress was slow until the stools were made normal by giving skimmed lactic acid milk.

Of the next group (2-3 months) three did well on lactic acid milk, and one on an ordinary cow's milk mixture.

Of Group 3. Seven were given lactified milk (whole or skimmed when necessary for loose stools with fat curds). Six gained satisfactorily, the seventh made no improvement on this or peptonised milk, but did well on a dried milk.

Group 4. One had dried milk and one cow's milk and Bengers.

Group 5. This one had cow's milk mixture, but unfortunately progress was interrupted by the development of whooping cough.

In five of the above cases casec was added to the skimmed lactified milk and proved useful for the correction of loose stools.

In the majority of cases Dextri-maltose No. 2 was the sugar used, and as soon as the stools permitted, cod liver oil was given.

Nine prematures from 7-11 months were admitted. Of these seven had definite clinical rachitic signs, six were X-rayed—3 showed active rickets; 2 showed healing; 1 showed normal bones.

Three of these had not been breast fed, one for 14 days, one for 2 months. The others had been breast fed for several months. They all had a suitable cow's milk mixture, cod liver oil, and other food suitable for their age and made good progress.

Infants Over Twelve Months of Age on Admission.

Of forty-seven admitted three were over three years, five between two and and three and the remainder between one and two years.

The majority of these were suffering from mal-nutrition, and in most cases due to poverty, poor housing and insufficient and unsuitable food. Some were apparently suffering from the results of mismanagement only. In sixteen cases a history of bronchitis was obtained, four had had pneumonia, seventeen were suffering from enteritis and nine from vomiting. Thirty-two had symptoms and clinical signs of rickets. X-rayed evidence of active rickets was present in ten cases. If the length of stay in hospital permitted these were re-examined after a month's treatment, in all cases the healing observed being satisfactory. A few of these were sent to the Children's Hospital for ultra-violet radiation treatment before our own lamp was installed. One case gave good results from the administration of irradiated cholesterol.

The average stay in hospital was 34 days, the cases with active rickets being kept the longest. The cases due to mismanagement all began to improve immediately, both physically and mentally, eating and sleeping well, and rapidly gaining weight. The enteritis cases all responded to treatment within a few days and they were able to take an ordinary toddlers diet, and like the ordinary mal-nutrition cases gained weight well.

Various infections occurred during their stay in hospital, bronchitis, otorrhœa, furunculosis, pyuria, urticaria. The pyuria in these cases appears very resistent to treatment, one case especially making very little response though the general condition of the child was much improved before discharge.

Ultra Violet Radiation.

A K.B.B. atmospheric type mercury vapour lamp, 440 volts., was installed in October. Treatment for In-patients was commenced on October 25th and for Out-patients on November 23rd.

The majority of the In-patients received treatment three times a week, the results being very encouraging although only observed for such a short time. One case showed very striking improvement. A convalescent osteomyelitis and empyema whose weight had been stationary for six weeks gained 3-lbs. in fifteen days after starting ultra violet treatment. The infants on an average do not progress as well in the winter as in the summer, but it is felt that the ultra violet radiation will greatly counteract the bad effects of the winter weather.

Ten Clinics were held for Out-patients, treatment being given twice weekly. Eleven patients began treatment, three having rickets, six malnutrition, and two debility following measles and pneumonia. As some only just started treatment it is not possible to give any results, but it should be a very valuable help to children in the Perry Common neighbourhood. Many more could have been sent from Erdington if there were an available 'bus or tram.

Deaths.

1.—Marasmus, following pyloric stenosis and Rammstedt's operation. The mother (age 17) and father were sister and brother.

2.—Cleft Palate. Congenital heart disease and marasmus. Aged seven weeks.

3.—Congenital syphilis and pneumonia. In hospital two days. Aged ten months.

4.—Marasmus and enteritis. Had a very bad family history, five other children had all died young and the mother had had four miscarriages.

5. Congenital debility and marasmus. Aged three months. (Eighth pregnancy). The condition at birth was very poor and he had done badly at a Convalescent Home; made no response to treatment.

6.—Marasmus and meningitis. Aged 6 months.

7.—Prematurity, very collapsed on admission and only lived one day. Aged five weeks.

9.—Congenital heart disease and marasmus. Whooping cough and pneumonia.

10.—Tuberculous meningitis. Aged 2 years.

Results of Investigations on the Utilisation of Food by Marasmic Infants.

These investigations were continued during last year and observations have been chiefly made on children fed on lactified milk. The conclusion to be drawn from these results, when compared with a number of children (100) fed on other dietaries, is as follows:—The intake of solids was on the whole higher than on ordinary milk and water because the dilution was generally less. The intake of protein was further increased in a few cases by the addition of lactalbumin.

The actual amount of fat absorbed was rather more than in the other group on ordinary milk, but owing to the increased intake the percentage absorption was less, 84 per cent. instead of 88 per cent. Lactified milk is, however, well split and saponified, and shows a smaller amount of neutral fat than any other group examined.

The actual amount of calcium absorbed remains the same in this group as in those on ordinary milk, but because the intake was higher the per cent. absorption was less.

The nitrogen absorption on lactified milk, 89.6 per cent was highest of any group examined on various foods except on a dried milk. The retention, however, was lower than in any other group except that where the intake was considerably increased by the addition of lactalbumin. The retention was reduced to 23 per cent. The absorption was not quite so good, on the whole, when lactalbumin was added to the lactified milk.

In spite of the smaller retention of nitrogen on lactified milk the average gain in weight for the group was twice as much as on ordinary cow's milk, nearly three times as much as when lactalbumin was added.

Twelve cases were thus investigated. The results are shown in tabular form below :—

FAT ABSORPTION.

		Distribution per cent. of Total Fat.			Grams per 24 hours.			
	Percentage of Total fat in Dried. F.	Saponified	Free Fatty Acid	Neutral	Intake	Output	Absorbed	Absorption per cent.
1	46.3	72.9	22.6	4.5	37.7	5.1	32.6	86.6
2	47.0	72.0	26.4	1.5	10.9	1.7	9.2	84.9
3	45.1	78.5	16.3	5.2	32.4	3.9	28.5	87.9
4	52.7	62.4	—	—	13.1	3.4	9.7	73.8
5*	48.7	86.1	9.8	3.9	18.0	4.3	13.7	76.4
6*	28.7	71.6	27.9	0.5	19.0	1.8	17.2	90.3
7	48.0	86.7	9.1	4.1	28.6	3.9	24.7	86.4
8	45.3	86.8	6.3	6.9	31.0	4.7	26.3	84.8
9	23.6	84.4	10.6	5.0	41.0	2.8	38.2	93.1
10	38.1	84.8	13.5	1.7	16.4	2.7	13.7	83.3
11†	49.8	83.1	12.2	4.7	41.3	5.7	35.6	86.1
12†	43.4	87.4	6.1	6.5	37.5	3.4	34.1	91.0

†Milk and water, and Dried Milk.
*Lactic Milk and Lactalbumin.
The rest on Lactified Milk.

NITROGEN ABSORPTION.

	24 hours' Intake, (grms.)	Fæcal Output	Urine Output	Wt. Absorbed	Wt. Retained	Per cent. Absorption	Per cent. Retention,
1	4.07	0.34	2.28	3.72	1.44	91.5	35.5
2	1.65	0.19	0.88	1.47	0.59	82.6	35.4
3	4.12	0.38	2.79	3.74	0.95	90.8	23.1
4	2.32	0.28	1.63	2.04	0.41	87.9	17.7
5	4.97	0.32	2.64	4.64	2.00	93.5	40.3
6	4.39	0.43	3.22	3.97	0.75	90.3	17.0
7	6.35	0.50	4.69	5.85	1.17	92.1	18.4
8	2.71	0.37	1.55	2.34	0.79	86.4	29.1
9	3.26	0.24	2.48	3.02	0.55	92.8	16.7
10	3.16	0.49	2.06	6.67	0.61	84.6	19.4
11	4.54	0.45	2.66	4.09	1.87	90.2	41.3
12	7.83	0.30	2.67	7.53	4.86	96.2	62.1

CALCIUM ABSORPTION AND RETENTION.

	24 hours Intake	Fæcal Output	Urine Output	Wt. Absorbed	Wt. Retained	Per cent. Absorption	Per cent. Retention	Per cent. in Urine
1	1.56	1.06	0.054	.50	.45	32.3	28.8	4.9
2	0.66	0.33	0.020	.34	.32	50.7	47.6	5.8
3	1.46	1.22	0.049	.24	.19	16.4	13.1	3.9
4	0.95	0.46	0.047	.49	.44	51.6	46.5	9.3
5	1.38	0.97	0.059	.41	.25	29.7	18.1	5.2
6	1.58	1.30	0.057	.29	.23	18.2	14.6	4.2
7	2.64	2.23	0.047	.41	.36	15.5	13.8	2.1
8	1.05	0.69	0.043	.36	.32	27.9	24.7	5.8
9	1.28	0.98	0.044	.33	.26	23.7	20.2	4.3
10	1.10	0.46	0.051	.64	.59	58.2	53.5	10.0
11	1.70	1.25	0.078	.50	.42	28.3	23.9	5.9
12	2.18	1.06	0.106	1.12	1.02	51.5	46.6	9.1

MUNICIPAL MATERNITY HOME.

The report sent to the Ministry of Health on the work of this Institution is as follows :—

Name of Institution—Birmingham Maternity Home.
Number of Beds 18.
Address—134, Heathfield Road, Handsworth.

(1)	Number of cases in the Home on 1st January, 1926	14 mothers. 10 babies.
(2)	Number of cases admitted during 1926	322.
(3)	Average duration of stay	11.7 days.
(4)	No. of cases delivered by— (a) midwives (b) doctors	 (a) 285. (b) 24.
(5)	No. of cases in which medical assistance was sought by the midwife with reasons for requiring assistance.	
	(a) Ante-natal	(a) 1 Eclampsia. Transferred to the Maternity Hospital. Recovery good.
	(b) During labour	(b) 1 Face presentation. Transferred to the Maternity Hospital. 1 Prolapse of the cord. 6 Occiput Posterior Primipara. 3 Delayed 2nd stage of labour. 3 Delayed 2nd stage of labour. Elderly primiparas.
	(c) After labour. (State separately No. of ruptured perineums which required suture).	(c) 1 Partially adherent placenta. 1 Adherent placenta. 1 Post Partum Hæmorrhage. Uterine Inertia. 36 Perineal tears.
	(d) For infant	(d) 14 Instances :— 5 Prematurity. 4 Convulsions. 1 Nephritis. 2 Eye discharge. 1 Cleft palate. 1 Skin eruption.
(6)	No. of cases notified as— (a) puerperal fever, and (b) puerperal pyrexia—(i.e., rise of temperature to 100.4 deg. F. or its recurrence within that period) with result of treatment in each case	 (a) 3 :— Mrs. B——n. Transferred to Hospital for Women. No temperature after admission. Discharged in one week. Parametritis. Mrs. H——s. Temperature 104 deg. ninth day Transferred to Hospital for Women, tenth day. Died from Septicæmia eight days later. Mrs. B——y. Instrumental delivery. Temperature 100 deg. on ninth day. Transferred to Hospital for Women the same night. Operation the following morning. Abdomen drained. Pneumonia a fortnight later. Is now at home in fairly good condition.
(7)	No. of cases of pemphigus neonatorum	Nil.
(8)	No. of cases of "inflammation of the eyes," however slight	—
(9)	No. of cases notified as ophthalmia neonatorum with result in each case	Two sent to Eye Hospital. Good recovery in each case.
(10)	No. of infants not entirely breast fed while in the Institution with reasons why they were not breast fed	Four. One—Mother's general health not good. Two—Mothers sent to Hospital for Women. One—Entirely breast fed until eighth day. Old scar tissue in both breasts gave trouble so doctor put the child on artificial feeds.
(11)	No. of Maternal deaths with causes	None.

(12) No. of fœtal deaths (a) stillborn, and (b) within 10 days of birth and their causes—and the results of the post mortem examination if obtainable ... ...

(a) Four. (Two macerated fœtus).
(b) Ten :—
7 premature babies.
2 convulsions (one instrumental delivery, the other a normal delivery).
1 Nephritis.

REPORT TO THE PUBLIC HEALTH COMMITTEE ON PUERPERAL SEPSIS AT HEATHFIELD ROAD MATERNITY HOME.

Mrs. B——n was admitted into the Institution on May 25th at 8 p.m., and was delivered on May 26th. She had some sores on her leg, which were treated. On May 30th her temperature was 100 deg. F., and Dr. Buchan was called in on the 31st. She was isolated, and was admitted into the Women's Hospital on June 8th, suffering from Parametritis. Her temperature after admission was normal, and she was discharged at the end of the second week.

This woman appeared to be the cause of a very virulent type of septic sore throat, infecting the Matron of the Institution, Miss Charnley. On May 31st Miss Charnley was seen by Dr. Buchan on account of a virulent septic infection of the throat. She was immediately taken off duty, and isolated from the rest of the Institution. She remained ill and was not able to leave her bed until June 20th. She was then confined to her room until June 28th, when she left for a holiday, returning to duty on July 12th.

On June 7th, Nurse Taylor suffered from a septic sore throat. As she was going for a holiday she went off the same day, and returned on July 1st for duty.

Nurse Molineux complained of a sore throat on June 10th. She was confined to her room until the 18th, and then left for home. She did not return to duty until June 26th.

Nurse Dilworth on July 6th had swollen tonsils, and went off duty, returning on July 18th, but apparently this was not the same type of infection as suffered by the other nurses.

It will be noted that after the case of Mrs. B——n three of the Staff appeared to have contracted sore throats of a septic nature, causing considerable prostration.

On July 5th, Mrs. H——s, a primi-para, was admitted and was delivered the same day by Sister Dutch and Midwife Hancox. She was isolated on July 10th on account of rise of temperature, and on the 13th was admitted into the Women's Hospital, and died there of Puerperal Sepsis on July 21st.

Mrs. B——y was admitted on July 13th, and was delivered by Dr. Moore on the morning of the 14th. She developed a temperature of 100 deg. F., and was transferred to the Women's Hospital on July 23rd, where after a long illness she recovered.

I am of opinion that septic infection was introduced by Mrs. B——n, and that this septic infection was transmitted to the Matron, Miss Charnley, who was present at her delivery, and to the other nurses who got sore throats.

None of these nurses took any part in subsequent confinements of women who afterwards developed septic conditions, but, as will be seen, the Matron and three nurses had apparently septic condition of the throat, and although a most careful scrutiny does not attribute any of these nurses as contacts, yet it appears to me to have been the probable method by which the infection was spread—either directly by nurses or indirectly by nurse companions.

In order to prevent a similar occurrence in futuduced by Mrs. B——n, and that this septic infection have been made whereby any septic throat or septic condition among the nurses will be reported to me by telephone at once, and the nurse in question will be removed to a Nursing Home with which I have made arrangements, so that she shall be removed from our Institution immediately.

PROVISION FOR CONFINEMENTS AT THE COST OF THE PUBLIC HEALTH DEPARTMENT IN HOSPITALS OF THE BOARD OF GUARDIANS.

During the year under review 1,201 patients were admitted to Dudley Road Hospital or Selly Oak Hospital for confinement because of the inadequacy of their home conditions. In the majority of cases these consisted of lodgings in cottages.

The cost to the Public Health Department was £4,390. The amount of money recovered from the patients was £1,393.

The total number of women confined in Guardians' Hospitals, Maternity Homes, or Homes, amounted to 2,986, *i.e.*, 16 per cent. of the births and still-births occurring during the year.

HOME HELPS.

During 1926 Home Helps were sent to 271 mothers during confinement and during absence from home on account of acute illness. The payment made for these cases varied from one shilling to five shillings per day. The women sent as Home-Helps have given entirely satisfactory service, and many letters have been received in appreciation.

PYPE HAYES CONVALESCENT HOME.

This Institution provides accommodation for 24 mothers who have recently had a difficult confinement. They come after operations such as Cæsarian section and other debilitating conditions connected with labour. At the Home they get the rest, good food and healthy surroundings which they need.

The number admitted in 1926 was 410.

MATERNITY FEEDING CENTRES.

During the year 16,085 dinners were served to mothers who were either pregnant or nursing and who were certified by one of the doctors to be undernourished. The Centres supplying these dinners were as follows :—

	Attendances.
Newtown Row	2935
Smith Street	2989
Hope Street	4904
River Street	2746
Bloomsbury Street	2511
	16,085

The numbers attending were smaller than in previous years although the attendances remained steady at each centre. No new centres were opened during the year.

The transport service was very reliable so that no delay was caused in serving the meals.

On the expiration of the lease of his former premises the Caterer had great difficulty in finding others at all suitable for cooking, but considering the circumstances, the food was, on the whole, fairly satisfactory.

Cost.				
Cost of food		556	8	1
Cost of Transport		108	9	0
		664	17	1
Receipts (from Centres)		128	10	11
	Total	£536	6	2

Net cost per meal = 8d.

MIDWIVES ACT.

During 1926 the Midwives and Maternity Homes Act, 1926, was passed.

The first Section of the Act strengthens the power of the local authority to prevent unqualified persons attending as midwives, and makes the penalty for such attendance heavier than formerly. It also does away with the necessity of proving that the unqualified person practises midwifery habitually and for gain.

The new Act permits compensation to be paid to a midwife who is suspended from practice in order to prevent the spread of infection, provided that such suspension is due to no fault on the part of the midwife.

The Act requires that a medical man called in by a midwife to a confinement shall submit his claim for his fee within two months from the date of his attendance.

The Act further gives power to the local authority to make arrangements whereby women may pay a fee by small instalments to cover the cost of any medical attendance required when a doctor is called in.

The Central Midwives Board may also frame rules requiring midwives to wear badges in order that the patients may know they are qualified persons.

The part of the Act relating to Maternity Homes did not come into operation until January 1st, 1927. This portion requires that all Maternity Homes shall be registered and that for registration the situation, construction, accommodation, and equipment shall be such as are sanctioned by the local authority.

NUMBER OF MIDWIVES.

During 1926 the number of midwives who notified their intention to practise midwifery in the City was 244. Of these 189 were certificated, and 55 were " bona fide " midwives certified under the Act of 1902. All the 244 midwives were regularly employed as such except seven who came to Birmingham to do holiday duty.

Fifteen of the midwives resided outside the City, but practised inside, two left during the year, one gave up owing to ill-health, and two died. The conduct of one midwife was investigated by the Public Health Committee, who reported a *prima facie* case of negligence to the Central Midwives Board, and subsequently the name of this midwife was removed from the Midwives Roll.

The number of cases attended by individual midwives was as follows :—

Midwives who attended over 300 cases	5
Between 200 and 300 ,, ...	9
,, 100 and 200 ,, ...	24
,, 50 and 100 ,, ...	42
,, 25 and 50 ,, ...	43
,, 10 and 25 ,, ...	35
Under 10 cases	34
No cases	52

It will be seen from the above table that 80 midwives are either making a reasonable living or making a poor living by their profession and that the remainder are not earning sufficient to support themselves.

The fees charged by midwives are lower than they were. There is general complaint that the number of bad debts which a midwife incurs is very large.

MEDICAL HELP.

A midwife is required by law to send for medical help in certain well-defined conditions occurring in the mother or child, and for this purpose she has to send a written message to a doctor, a copy of which is furnished to the Public Health Department.

During 1926 the Birmingham midwives sent for medical help in 2,305 cases, that is, in 18 per cent. of the confinements attended by them.

REASONS FOR SENDING FOR MEDICAL HELP.

For Mother (1,706).		For Child (599).	
Delayed labour	575	Ophthalmia	287
Laceration of perineum	462	Prematurity	121
Hæmorrhage	111	Convulsions	9
Adherent placenta	65	Jaundice	18
Abnormal presentation	103	Deformity	27
Abortion or miscarriage	36	Skin eruptions	42
Rise of temperature	136	Other causes	95
Other causes	218		

During the financial year the Public Health Committee paid the doctor's fee in 716 cases, amounting to £932. During the year they recovered £576 from patients who were supplied with medical aid. The amount recovered, however, does not coincide with the payments, as in many cases repayment is made by instalments extending over a considerable period. The cost of recovery was £225.

SUPERVISION OF MIDWIVES.

Two Midwives Inspectors are employed in visiting midwives and in visiting certain cases in which stillbirths, puerperal sepsis, ophthalmia, etc., have occurred. Last year they paid 3,309 visits, viz. : 429 routine visits to midwives, 676 to ophthalmia cases, 159 to stillbirths, 160 to cases of puerperal sepsis, 1,097 with regard to Medical Help Fees, and 99 to Maternity Helps. They also had 271 interviews with midwives at the Public Health Department.

PUERPERAL SEPSIS.

Since 1912 the procedure adopted in Birmingham for dealing with cases of puerperal sepsis has been fairly uniform. Provision was made during the whole of this period for the admission into the Women's Hospital of any woman suffering from puerperal sepsis. In order to facilitate this admission ambulance accommodation is provided free of charge. Any medical practitioner, therefore, who has a case of puerperal sepsis may get his patient removed into a hospital having a first-class staff of physicians and surgeons, so that the best available treatment is at hand.

The next table shows the number of cases notified and the number of deaths each year.

Year.	Cases.	Deaths.	Deaths per 1,000 births.
1912	78	27	1.22
1913	112	44	1.85
1914	149	33	1.42
1915	161	35	1.65
1916	170	31	1.50
1917	97	26	1.47
1918	92	29	1.72
1919	105	23	1.19
1920	148	51	2.03
1921	105	26	1.17
1922	137	25	1.26
1923	186	34	1.78
1924	120	37	2.01
1925	146	35	1.96
1926	157	41	2.29

From this it will be seen that very little, if any, improvement has resulted from what is being done.

One mother contracted puerperal sepsis in every 118 births and stillbirths during the year. An enquiry was made in every instance, and the cases may be classified as follows :—

	Cases.	Deaths.
After full-time labour	126	23
After premature labour	2	1
After abortion	29	17

Of the 157 notified cases, 140 were removed to various hospitals for treatment.

During the year 1926 the Ministry of Health issued the Public Health (Puerperal Fever and Puerperal Pyrexia) Regulations. These Regulations have for their object the more complete notification of all cases in which symptoms suggestive of septic infection become manifest. They provide that a medical practitioner may call in to his aid an obstetric specialist and the fee of this consultant may be paid by the local authority. He may also apply for the services of a nurse or for the admission of the patient to a hospital. The principle involved in these Regulations is to assist the medical attendant to make quite certain of the diagnosis at the earliest possible moment, and so to enable treatment on proper lines to be commenced as soon as possible. The attention of all the doctors in Birmingham was drawn to these Regulations, and a panel of consultants was appointed to assist them in their work in this connection.

OPHTHALMIA NEONATORUM.

The reported cases of this disease, together with the general statistics as to the results of treatment since 1917 are indicated in the following table :—

Year.	No. of cases reported.	No. of babies blind in :		No. of babies with eyes otherwise impaired.
		One eye.	Both eyes	
1917	237	3	0	6
1918	228	3	0	6
1919	282	4	0	5
1920	444	?	?	6
1921	427	1	0	0
1922	484	1	0	1
1923	433	0	0	10
1924	413	1	1	1
1925	335	0	2	3
1926	395	1	0	2

It will be noted that no child during the year became blind in both eyes and that only three children had damaged eyes.

The first of these cases was the child of a mother 18 years of age, whose confinement took place at the Maternity Hospital. The child was sent to the Eye Hospital from the Maternity Hospital on the ninth day, and was notified from the Eye Hospital as suffering from Ophthalmia Neonatorum. The case was a severe one, and mother and child were detained but left the hospital against advice on the following day. A good deal of time was expended in finding out the whereabouts of this child and insisting on the mother taking it to the Eye Hospital again. The mother and child were admitted a second time to the Eye Hospital on October 4th and discharged on November 13th. This child has one eye which will be nearly blind, but, fortunately, the other eye is apparently all right.

The second case was attended by a doctor at its birth. About the tenth day Ophthalmia was suspected, and the child was sent to the Eye Hospital on September 6th and notified by Dr. Sykes to be suffering from Ophthalmia Neonatorum. The child was admitted to the Eye Hospital on September 13th and discharged on the 17th. It was readmitted on October 9th, and on November 10th was transferred to the Children's Hospital. The right eye is apparently normal, but in the left eye there will be imperfect vision.

The third case was that of a child born of a young mother before the doctor or nurse arrived. The Ophthalmia was noticed on the 5th day and reported to the doctor. Three days later the child was taken to the Eye Hospital, and it was admitted on February 8th and discharged on March 25th. In this case one eye will be completely blind, but the other is apparently normal.

It will be noted from the above that in every one of these cases there was a good deal of delay between the recognition of the disease and treatment at the Eye Hospital. The Public Health Department would in ordinary circumstances not know of such cases until they were notified. It is probable that with effective early treatment some of these children might have had their eyesight saved.

TABLE I.

Vital Statistics during 1926 *and previous years.*

Year.	Population Estimated to middle of each Year.	BIRTHS.		DEATHS.		INFANT MORTALITY.		DEATHS FROM									
								Influenza.		Tuberculosis.		Cancer.		Heart Disease.		Respiratory Diseases.	
		Number.	Rate.	Number.	Rate.	Deaths.	Rate.	Number.	Rate.	Number.	Rate.	Number.	Rate.	Number.	Rate.	Number.	Rate.
1901	760,989	23,866	31.4	13,290	17.5	4,205	176	122	.16	1,515	1.99	552	.73	896	1.18	2,656	3.50
1902	768,757	24,246*	31.2	12,650*	16.3	3,503*	144	97*	.12	1,356*	1.75	530*	.68	932*	1.20	2,517	3.24
1903	776,604	23,956	30.9	12,224	15.8	3,525	147	79	.10	1,362	1.76	592	.76	905	1.17	2,269	2.93
1904	784,532	24,260	31.0	13,882	17.7	4,346	179	104	.13	1,369	1.75	578	.74	943	1.20	2,635	3.36
1905	792,540	22,939	29.0	11,948	15.1	3,224	141	107	.14	1,316	1.67	643	.81	889	1.12	2,310	2.92
1906	800,631	23,484	29.4	12,737	15.9	3,682	157	123	.15	1,203	1.51	664	.83	956	1.20	2,239	2.80
1907	808,803	23,233	28.8	12,356	15.3	3,084	133	128	.16	1,241	1.54	645	.80	1,041	1.29	2,475	3.07
1908	817,060	23,986*	29.1	12,596*	15.3	3,124*	130	255*	.31	1,308*	1.59	702*	.85	1,028*	1.25	2,326	2.82
1909	825,400	22,555	27.4	12,398	15.1	2,727	121	151	.18	1,256	1.52	678	.82	972	1.18	2,428	2.95
1910	833,826	22,288	26.8	11,001	13.2	2,570	115	93	.11	1,168	1.40	737	.89	954	1.15	2,062	2.48
1911	842,337	21,975	26.1	12,623	15.0	3,298	150	79	.09	1,230	1.46	748	.89	1,013	1.21	2,114	2.51
1912	850,947	22,168	26.1	12,005	14.1	2,470	111	98	.12	1,292	1.52	791	.93	969	1.14	2,272	2.68
1913	859,644	23,812*	27.3	12,962*	14.9	3,070*	129	112*	.13	1,341*	1.53	893*	1.02	1,135*	1.30	2,170	2.48
1914	882,534	23,207	26.4	13,026	14.8	2,839	122	142	.16	1,293	1.47	773	.88	1,301	1.48	2,369	2.69
1915	891,234	21,187	23.8	12,816	14.4	2,490	118	146	.16	1,377	1.55	885	1.00	1,338	1.51	2,506	2.82
1916	895,678	20,618	23.1	12,081	13.5	2,142	104	146	.16	1,324	1.48	897	1.00	1,362	1.52	2,322	2.60
1917	900,000	17,706	19.7	11,274	12.6	1,791	101	98	.11	1,405	1.56	912	1.02	1,369	1.53	1,888	2.10
1918	870,000	16,840	19.4	13,175	15.2	1,674	99	2,172	2.50	1,385	1.60	883	1.02	1,241	1.43	2,473	2.85
1919	910,000	19,335*	20.9	12,000*	13.0	1,630*	84	1,062*	1.15	1,188*	1.28	935*	1.01	1,258	1.36	2,466	2.67
1920	910,000	25,069	27.6	11,409	12.6	2,072	83	421	.46	1,001	1.10	1,014	1.12	1,232	1.36	2,232	2.46
1921	919,683	22,134	24.1	10,361	11.3	1,838	83	134	.15	1,035	1.13	1,020	1.12	1,181	1.29	1,857	2.02
1922	927,844	19,850	21.5	11,212	12.1	1,705	86	442	.48	1,049	1.13	1,090	1.18	1,306	1.41	2,206	2.38
1923	936,079	19,069	20.4	10,248	11.0	1,370	72	264	.28	1,006	1.08	1,092	1.17	1,221	1.31	1,849	1.98
1924	944,386	18,390*	19.2	11,181*	11.6	1,518*	83	375*	.39	1,055*	1.10	1,251*	1.30	1,359	1.42	2,061	2.15
1925	952,766	17,836	18.8	11,102	11.7	1,389	78	370	.39	1,083	1.14	1,204	1.27	1,441	1.52	1,872	1.97
1926	961,222	17,932	18.7	10,847	11.3	1,301	73	260	.27	1,024	1.06	1,205	1.26	1,636	1.71	1,799	1.88

* 53 Weeks.

TABLE II.

Causes of, and Ages at Death during the Year ending January 1st, 1927.

CAUSE OF DEATH.	AGES.																Males	Fe-males	Per-sons.
	0-	1-	2-	3-	4-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-			
I.—GENERAL DISEASES.																			
Enteric Fever	—	—	—	—	—	—	—	1	—	—	1	—	1	—	—	—	1	2	3
Typhus Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Relapsing Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mediterranean Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles	21	36	10	8	1	1	1	—	—	—	—	—	—	—	—	—	47	31	78
Scarlet Fever	—	1	—	1	1	3	1	1	—	—	—	—	—	—	—	—	3	5	8
Whooping Cough	61	42	9	6	2	8	—	—	—	—	—	—	—	—	—	—	60	68	128
Diphtheria	4	10	11	7	15	52	12	1	1	—	1	1	1	—	—	—	56	60	116
Influenza	4	4	1	1	3	—	2	1	8	26	40	40	50	46	25	9	130	130	260
Miliary Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mumps	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Asiatic Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera Nostras	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dysentery	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Plague	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Yellow Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Spirochætosis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Leprosy	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Erysipelas	3	—	—	—	—	—	1	—	1	1	1	4	3	4	2	1	13	8	21
Ac. Poliomyelitis	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	1	2
Polioencephalitis	1	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	1	2	3
Encephalitis Lethargica	—	1	1	—	—	1	1	4	—	6	6	14	7	3	—	—	14	30	44
Meningococcal Meningitis	4	1	1	—	—	—	—	1	1	1	1	—	—	—	—	—	4	6	10
Other Epidemic Diseases	2	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	3	1	4
Glanders	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Anthrax	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rabies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tetanus	1	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	1	2	3
Mycoses	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1
Tuberculosis :—																			
Respiratory System	4	6	2	—	2	7	9	80	103	198	209	174	83	23	5	—	511	394	905
Nervous System	11	13	11	6	6	6	7	1	4	1	1	3	—	—	—	—	34	36	70
Intestines, Peritoneum	2	1	—	—	2	3	3	1	—	2	3	2	1	1	1	—	10	12	22
Vertebral Column	—	—	—	—	—	2	—	—	1	1	1	—	—	—	—	—	3	2	5
Joints	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	1
Other Organs	—	—	—	—	—	—	—	1	—	—	3	—	1	—	—	—	5	—	5
Disseminated	2	—	1	—	1	1	2	2	2	3	—	1	1	—	—	—	10	6	16
Syphilis	7	1	—	—	—	—	—	—	—	2	7	11	7	3	—	—	28	10	38
Soft Chancre	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gonococcal Infection	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	2
Purulent Infection, Septicæmia	2	—	—	—	—	—	1	—	—	1	2	3	3	3	—	—	7	8	15
Other Infectious Diseases	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
II.—GENERAL DISEASES NOT INCLUDED ABOVE.																			
Cancer :—																			
Buccal Cavity	—	—	—	—	—	—	1	—	—	1	—	16	31	11	7	1	60	8	68
Phar. Œsop. stomach, liver, etc.	—	—	—	—	—	—	—	—	—	6	16	50	111	103	45	6	193	144	337
Peritoneum, Intestines	—	—	—	—	—	—	—	—	—	3	11	31	66	106	47	8	134	138	272
Female Organs	—	—	—	—	—	—	—	—	—	6	12	35	29	29	14	2	—	127	127
Breast	—	—	—	—	—	—	—	—	—	2	16	41	39	18	9	2	1	126	127
Skin	—	—	—	—	—	—	—	—	—	1	1	2	4	5	3	—	9	7	16
Other Organs	1	—	—	—	1	2	3	1	4	7	23	47	71	66	29	3	176	82	258
Non-Malignant Tumours	—	—	—	—	—	—	—	—	1	1	2	2	3	3	3	1	8	8	16
Rheumatic Fever	—	1	—	1	2	13	11	15	7	4	1	4	2	—	—	—	21	40	61
Chronic Rheumatism	—	—	—	—	—	—	—	—	1	—	1	4	10	19	10	3	18	30	48
Scurvy	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Pellagra	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Beri-Beri	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rickets	3	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—	1	5	6
Diabetes	—	—	—	—	—	1	1	2	—	1	6	11	22	26	11	—	34	47	81

TABLE II.—*Continued.*

CAUSE OF DEATH.	AGES.																Males	Fe-males	Per-sons.
	0-	1-	2-	3-	4-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-			
Anaemia, Chlorosis	2	—	2	—	—	—	—	1	4	3	6	10	17	8	5	—	26	32	58
Diseases of Pituitary Gland	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diseases of Thyroid Gland	—	—	—	—	—	—	—	2	3	1	4	8	4	3	2	—	4	23	27
Diseases of the Parathyroid Glands	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Diseases of Thymus	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	—	2
Diseases of Adrenals	—	—	—	—	—	—	—	—	—	—	—	2	2	—	1	—	2	3	5
Diseases of Spleen	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1
Leukæmia, Lymphadenoma	—	—	—	—	—	1	2	4	3	4	2	6	4	2	—	—	17	11	28
Alcoholism	—	—	—	—	—	—	—	—	—	—	1	2	1	—	—	—	3	1	4
Chronic Poisoning by Minerals	—	—	—	—	—	—	—	—	1	—	—	—	1	1	—	—	3	—	3
Chronic Poisoning by Organic Sub.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other General Diseases	—	1	—	1	—	1	—	1	—	—	—	2	1	—	—	—	2	5	7
III.—NERVOUS SYSTEM AND SENSE ORGANS.																			
Encephalitis	2	1	—	—	1	1	1	—	2	—	4	2	—	—	—	—	10	4	14
Meningitis	9	5	—	1	1	1	4	—	1	3	2	2	—	—	—	—	12	17	29
Tabes Dorsalis	—	—	—	—	—	—	—	—	—	1	1	6	3	6	—	—	15	2	17
Other Dis., Spinal Cord	—	—	—	1	—	—	2	3	—	1	3	5	8	4	2	1	17	13	30
Cerebral Haemorrhage, Apoplexy, etc.	—	—	—	—	—	—	—	1	1	2	18	61	133	234	157	40	303	344	647
Paralysis (of unstated origin) ...	1	—	—	—	—	—	—	—	—	—	1	3	3	10	15	2	19	16	35
General Paralysis of Insane	—	—	—	—	—	—	—	—	1	2	4	2	3	1	—	—	10	3	13
Other forms of Insanity	—	—	—	—	—	—	—	—	—	3	—	3	1	1	—	—	4	4	8
Epilepsy	—	1	—	—	—	2	3	5	2	9	8	7	6	9	4	—	34	22	56
Convulsions (5 and over)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Convulsions (under 5)...	36	6	1	1	1	—	—	—	—	—	—	—	—	—	—	—	22	23	45
Chorea	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	1	1	2
Hysteria, Neuritis	—	—	—	—	—	—	—	1	—	—	2	2	—	—	—	—	1	4	5
Cerebral Softening	—	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	2	1	3
Other Diseases of Nervous System ...	1	1	1	4	1	3	1	4	3	9	15	10	12	12	6	1	45	39	84
Diseases of Eyes and Annexa ...	1	—	—	—	—	1	—	—	—	—	—	—	—	—	1	—	1	2	3
Diseases of Ear:—																			
1. Mastoid Disease	1	—	—	—	—	4	2	1	1	2	—	1	—	—	—	—	6	6	12
2. Other Diseases of Ears ...	2	1	—	1	—	3	4	4	1	2	2	1	3	—	—	—	14	10	24
IV.—CIRCULATORY SYSTEM.																			
Pericarditis	1	—	—	2	—	3	—	—	—	—	—	1	1	—	—	—	6	2	8
Acute Endocarditis and Myocarditis	1	—	—	—	—	3	1	3	6	11	6	4	4	—	2	—	21	20	41
Angina Pectoris	—	—	—	—	—	—	—	—	—	—	1	9	17	11	9	—	33	14	47
Other Dis. of Heart	—	—	1	—	—	8	12	19	9	42	85	125	313	471	367	88	721	819	1540
Disease of Arteries	—	—	—	—	—	—	—	—	1	—	9	23	67	116	114	34	216	148	364
Embolism, Throm. (not Cerebral). ...	1	—	—	—	—	—	—	1	—	1	2	1	5	2	2	—	8	7	15
Diseases of Veins	—	—	—	—	—	—	—	—	—	1	—	3	2	2	1	1	5	5	10
Diseases of Lymph. System	—	1	—	—	—	1	—	1	—	—	—	1	1	—	—	—	2	3	5
Hæmorrhage (cause not stated) ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Dis. of Circulatory System ...	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	1
V.—RESPIRATORY SYSTEM.																			
Diseases of Nasal Fossae	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diseases of Larynx	1	1	—	1	1	2	—	—	—	—	—	—	—	2	—	—	3	5	8
Bronchitis	67	12	6	1	2	2	1	2	1	10	28	63	92	230	191	56	379	385	764
Bronchopneumonia	208	86	34	13	3	13	5	2	6	6	15	23	30	40	22	7	290	223	513
Lobar Pneumonia (or type not stated)	19	23	6	5	4	12	5	10	3	39	63	84	62	45	28	7	269	146	415
Pleurisy	2	—	—	—	—	—	—	—	1	2	1	2	4	3	—	—	13	2	15
Congestion and Hæmorrhagic Infarct of Lung	4	—	—	—	—	—	—	—	—	1	1	2	5	4	13	—	14	16	30
Gangrene of Lung	—	—	—	—	—	—	—	—	—	—	—	1	2	—	—	—	3	—	3
Asthma	—	—	—	—	—	—	—	—	1	—	8	8	11	7	4	—	16	23	39
Pulmonary Emphysema	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	1
Other Dis. of Respiratory System ...	—	2	—	—	—	—	—	—	—	—	—	2	2	5	—	—	7	4	11
VI.—DIGESTIVE SYSTEM.																			
Diseases of Buccal Cavity	—	—	—	—	—	—	—	—	1	—	—	3	4	1	1	—	4	6	10
Diseases of Pharynx and Tonsils ...	—	1	—	—	—	2	1	1	2	1	1	3	1	1	—	—	6	8	14

TABLE II.—*Continued.*

CAUSE OF DEATH.	AGES.																Males	Females	Persons
	0-	1-	2-	3-	4-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-			
Diseases of the Œsophagus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ulcer of Stomach and Duodenum ...	1	—	—	—	—	—	—	1	1	10	21	39	28	12	1	—	83	31	114
Other Dis. of Stomach	11	1	—	—	—	1	—	1	1	—	3	4	7	12	6	2	27	22	49
Diarrhoea, Enteritis	162	39	2	1	3	2	—	—	2	5	3	5	3	8	7	2	134	110	244
Ankylostomiasis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Intestinal Parasites	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Appendicitis and Typhlitis	—	—	—	1	1	7	4	5	5	3	7	1	12	1	1	—	28	20	48
Hernia, Intestinal Obstruction ...	6	2	1	—	1	2	—	4	2	3	7	3	12	14	16	3	31	45	76
Other Dis. of Intestines	1	—	—	—	1	—	—	—	—	—	—	1	1	1	—	2	5	2	7
Acute Yellow Atrophy of Liver ...	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	1
Hydatid of Liver	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	1	1	2
Cirrhosis of Liver	—	—	—	—	—	—	—	2	—	—	4	14	14	10	1	—	27	18	45
Biliary Calculi	—	—	—	—	—	—	—	—	—	—	1	4	4	6	4	1	4	16	20
Other Dis. of Liver	—	—	—	—	—	—	—	—	1	—	3	6	14	14	4	1	15	28	43
Diseases of Pancreas	—	—	—	—	—	—	—	—	—	1	1	2	5	—	2	—	4	7	11
Peritonitis (cause unstated)	—	1	—	—	—	5	—	1	—	1	2	1	—	1	—	—	5	7	12
Other Diseases of Digestive System...	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1
VII.—GENITO-URINARY SYSTEM.																			
Acute Nephritis	2	3	—	2	—	—	5	1	—	3	2	1	4	—	—	—	6	17	23
Chronic Nephritis	—	—	—	—	—	—	4	2	9	11	25	49	41	67	19	8	123	112	235
Chyluria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Dis. of Kidneys and Annexa ...	1	—	—	—	—	—	1	1	—	4	2	6	2	6	—	—	13	10	23
Calculi. of Urinary Passages	—	—	—	—	—	—	—	—	—	1	5	—	3	—	2	—	9	2	11
Diseases of Bladder	—	—	—	—	—	—	—	—	—	1	—	1	4	6	3	—	12	3	15
Diseases of Urethra, etc.	—	—	—	—	—	—	—	—	—	—	—	—	4	3	1	—	8	—	8
Diseases of Prostate	—	—	—	—	—	—	—	—	—	—	—	1	9	17	15	—	42	—	42
Non-Venereal Dis. of Male Organs ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cysts & Tumours of Ovary (non-malig.)	—	—	—	—	—	—	—	—	—	2	1	1	2	1	—	—	—	7	7
Salpingitis & Pelvic Abcess in Females	—	—	—	—	—	—	—	—	1	6	2	1	—	—	1	—	—	11	11
Tumour of Uterus (non-malig.) ...	—	—	—	—	—	—	—	—	—	1	2	2	1	—	1	—	—	7	7
Non-Puerperal Uterine Haemorrhage	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1
Other Diseases of Female Organs ...	—	—	—	—	—	—	—	—	—	1	—	—	2	—	—	—	—	3	3
Non-Puerperal Diseases of Breast ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VIII.—THE PUERPERAL STATE.																			
Accidents of Pregnancy	—	—	—	—	—	—	—	—	2	6	1	—	—	—	—	—	—	9	9
Puerperal Haemorrhage	—	—	—	—	—	—	—	—	—	4	1	—	—	—	—	—	—	5	5
Other Accidents of Childbirth ...	—	—	—	—	—	—	—	—	—	2	1	—	—	—	—	—	—	3	3
Puerperal Sepsis	—	—	—	—	—	—	—	3	8	19	10	1	—	—	—	—	—	41	41
Puerperal Phlegmasia Alba Dolens, Embolism	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	2	2
Puerperal Albuminuria & Convulsions	—	—	—	—	—	—	—	1	1	5	3	1	—	—	—	—	—	11	11
Childbirth not in other Headings (Puerperal Insanity)	—	—	—	—	—	—	—	—	—	1	2	—	—	—	—	—	—	3	3
Puerperal Dis. of Breast	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
IX.—SKIN AND CELLULAR TISSUE.																			
Gangrene	—	—	—	—	—	—	—	—	—	—	—	—	2	8	5	4	9	10	19
Carbuncle, Boil	—	—	—	—	—	—	—	1	—	—	—	1	2	2	—	—	4	2	6
Cellulitis, Acute Abscess, ...	1	—	—	—	—	—	2	2	—	—	2	2	2	1	3	—	10	5	15
Other Diseases of Skin and Annexa	7	—	—	—	—	—	—	—	—	1	1	3	1	6	3	2	11	13	24
X.—BONES AND ORGANS OF LOCOMOTION.																			
Diseases of Bones	—	—	—	—	1	1	2	2	1	—	2	2	2	1	—	—	10	4	14
Diseases of Joints	1	—	—	—	—	—	2	—	—	—	—	—	2	3	—	—	3	5	8
Amputations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Dis. of Locomotor System ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
XI.—CONGENITAL MALFORMATIONS.																			
Congenital Malformations	79	3	3	2	—	—	2	—	1	3	1	1	—	—	—	—	51	44	95

TABLE II.—*Continued.*

CAUSE OF DEATH.	AGES.																Males	Fe-males	Per-sons
	0-	1-	2-	3-	4-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-			
XII.—DISEASES OF EARLY INFANCY.																			
Cong. Debility, Sclerema, Icterus, ...	113	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	74	39	113
Premature Birth, Injury at Birth, etc.	351	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	198	153	351
Other Diseases, Early Infancy ...	27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17	10	27
Lack of Care	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	7	1	8
XIII.—OLD AGE.																			
Old Age	—	—	—	—	—	—	—	—	—	—	—	—	1	83	209	105	136	262	398
XIV.—EXTERNAL CAUSES.																			
Suicide—																			
Poison (Solid, Liquid or Corrosive Substances).	—	—	—	—	—	—	—	1	2	2	3	9	5	1	—	—	17	6	23
,, Poisonous Gas	—	—	—	—	—	—	—	—	1	6	11	9	8	3	—	—	25	13	38
,, Hanging, Strangulation	—	—	—	—	—	—	—	—	2	2	3	6	3	—	—	—	9	7	16
,, Drowning	—	—	—	—	—	—	—	—	—	—	3	5	—	2	—	1	9	2	11
,, Firearms	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—	2	—	2
,, Cutting or Piercing	—	—	—	—	—	—	—	—	—	—	2	5	6	2	—	—	14	1	15
,, Jumping from High Places ...	—	—	—	—	—	—	—	—	1	—	1	2	—	3	—	—	4	3	7
,, Crushing	—	—	—	—	—	—	—	—	1	—	1	—	1	—	—	—	3	—	3
,, Other Suicides	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Poisoning by Food	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Poisoning by Venomous Animals ...	—	—	—		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Acute Poisonings	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Conflagration	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	1
Burns (Conflagration excepted) ...	4	7	1	2	1	8	—	1	1	1	1	1	1	1	4	—	15	19	34
Acc. Mechanical Suffocation	24	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	13	13	26
Acc. Absorption of Irrespirable or Poisonous Gas.	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2	—	1	2	3
Accidental Drowning	—	—	—	2	1	8	2	2	1	—	1	—	2	1	—	—	19	1	20
Accidental Injury—																			
By Firearms	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
,, Cutting or Piercing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
,, Fall	2	—	1	—	—	2	1	—	—	6	5	3	8	14	30	12	34	50	84
,, Mines and Quarries	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
,, Machines	—	—	—	—	—	1	—	—	1	1	2	2	2	—	—	—	9	—	9
,, Other Crushing (vehicles) ...	—	2	—	4	4	12	9	10	13	15	11	17	2	16	6	1	104	18	122
,, Animals (Poisoning excep'd) ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
,, Wounds of War	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	1
,, Execution of Civilians by Armies	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
,, Hunger or Thirst...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Excessive Cold	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Effects of Heat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lightning	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Electricity	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	1
Homicide by Firearms	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Homicide by Cutting or Piercing ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Homicide, Other Means	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	1	1
Infanticide	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	2
Fractures (not specified)	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2	2
Other forms of Violence, Execution	—	—	—	—	—	—	—	1	—	—	—	1	1	—	—	—	2	1	3
Violent Deaths, cause unknown ...	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	1
XV.—ILL-DEFINED DISEASES.																			
Ill-defined, Sudden death	—	—	—	—	—	—	—	—	—	—	—	1	1	2	—	—	4	—	4
Cause, ill-defined or unstated ...	2	—	—	1	—	—	1	—	—	—	1	3	2	—	—	—	3	7	10
TOTALS	1301	322	107	77	64	215	137	222	251	561	823	1210	1602	2031	1507	417	5590	5257	10847

TABLE III. *Births and Deaths Registered in, or belonging to, each Ward during the Year ending January 1st, 1927.*

Causes of Death.	Acock's Green.	All Saints'.	Aston.	Balsall Heath	Duddeston and Nechells	Edgbaston	Erdington (North)	Erdington (South)	Handsworth	Harborne	King's Norton	Ladywood	Lozells	Market Hall	Moseley and King's Heath	Northfield	Rotton Park	St. Bartholomew's	St. Martin's	St. Mary's	St. Paul's	Saltley	Sandwell	Selly Oak	Small Heath	Soho	Sparkbrook	Sparkhill	Washwood Heath	Yardley	Not Located	City
Enteric Fever	—	—	—	—	—	2	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3
Small Pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles	1	2	1	6	5	2	3	—	—	—	1	7	1	2	2	—	5	4	7	12	9	1	—	—	—	1	2	2	2	—	—	78
Scarlet Fever	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	1	—	1	—	—	1	1	—	—	—	—	8
Whooping Cough	—	10	13	6	4	1	1	4	2	1	3	6	1	4	4	—	7	12	9	7	5	6	—	2	1	1	5	4	5	4	—	128
Diphtheria, Croup ...	1	18	4	3	1	6	2	—	3	—	—	6	4	—	3	—	4	6	8	5	4	7	—	1	7	—	16	1	6	—	—	116
Influenza	8	16	15	14	10	16	9	7	6	1	7	4	9	5	5	2	10	18	16	10	9	6	5	4	10	8	12	7	10	1	—	260
Erysipelas	—	4	1	1	4	1	—	—	—	—	—	3	1	1	—	—	1	1	1	—	—	—	—	—	—	—	1	—	1	—	—	21
Pulmonary Tuberculosis	29	31	53	44	65	28	25	21	29	12	12	33	41	21	13	12	41	47	65	55	43	19	18	18	20	17	30	18	33	10	2	905
Tuberculous Meningitis ...	2	3	6	2	7	1	1	2	2	1	—	4	3	1	1	1	2	5	4	2	7	2	—	1	2	3	3	1	—	1	—	70
Abdominal Tuberculosis ...	—	2	—	—	4	1	—	1	1	—	—	1	3	—	—	—	2	—	1	1	1	—	—	—	1	—	1	1	1	—	—	22
Other Tuberculous Dis. ...	2	—	—	1	1	3	1	—	—	—	1	—	—	1	3	—	—	1	1	1	2	1	—	1	—	2	1	1	1	2	—	27
Cancer	31	77	52	56	50	57	27	30	37	24	26	36	51	20	46	12	66	45	63	34	36	25	17	41	31	36	59	49	39	22	10	1205
Rheumatic Fever ...	1	7	4	2	5	2	1	1	—	1	3	1	—	1	1	—	4	3	6	4	—	2	1	2	3	1	—	2	2	1	—	61
Diabetes	2	5	2	2	—	5	—	1	4	3	1	4	5	2	3	—	5	5	2	2	3	4	2	3	3	4	3	—	4	2	—	81
Encephalitis Lethargica ...	1	1	2	—	4	2	—	—	1	—	1	4	—	1	—	1	1	3	3	1	2	2	1	—	3	3	2	4	—	1	—	44
Cerebro-Spinal Fever ...	—	—	1	1	—	—	—	—	1	—	—	—	—	—	1	—	1	1	—	2	—	1	—	—	—	—	1	—	—	—	—	10
Meningitis (other forms) ...	2	—	1	2	—	2	2	1	—	1	—	3	2	1	1	1	1	—	—	1	4	—	1	—	—	1	2	—	—	—	—	29
Polio-Encephalitis ...	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	3
Acute Poliomyelitis ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	2
Cereb'l Haemorr., Apop.	19	29	24	20	30	43	12	13	17	8	9	28	40	11	21	12	27	27	30	23	24	13	20	12	23	39	13	25	23	8	4	647
Convulsions	1	3	4	1	7	—	—	—	—	1	2	—	2	1	1	—	2	2	4	2	4	1	1	—	—	3	2	—	1	—	—	45
Diseases of Heart... ...	52	68	83	83	66	57	38	39	47	26	35	50	78	41	63	12	78	93	87	91	66	43	27	32	45	36	64	43	58	17	18	1636
Arterio-Sclerosis	6	22	6	15	10	20	6	5	11	8	12	10	16	7	14	3	14	8	22	15	16	5	12	12	7	13	13	4	6	8	4	330
Bronchitis	14	29	42	46	59	26	9	8	13	13	16	26	28	29	13	6	38	47	58	45	18	20	26	14	24	21	22	10	30	8	6	764
Pneumonia	16	54	52	38	68	38	22	11	22	9	11	32	28	17	21	4	49	46	61	88	64	22	9	13	18	27	23	25	27	11	2	928
Other Respiratory Dis. ...	5	5	6	5	9	5	2	1	3	1	7	—	3	2	2	1	4	6	9	3	3	4	1	4	1	5	5	—	2	2	1	107
Diarrhoea, Enteritis, etc—																																
Under two years... ...	2	9	5	6	18	4	3	1	1	—	3	8	1	9	1	—	5	20	24	27	16	5	1	7	2	2	3	7	5	4	2	201
Two years and over ...	—	3	1	1	1	—	1	1	—	3	—	1	3	1	2	—	—	4	2	5	—	—	2	2	1	2	—	—	4	—	3	43
Appendicitis, Typhlitis ...	2	1	1	2	3	6	—	3	—	2	1	2	2	1	1	—	1	1	1	1	3	—	1	3	—	2	3	2	3	—	—	48
Cirrhosis of Liver ...	—	1	1	—	1	—	—	3	1	1	—	2	2	2	3	—	1	3	2	1	6	1	—	1	3	2	4	1	2	1	—	45
Alcoholism...	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	4
Nephritis & Bright's Dis.	11	13	7	19	14	11	4	7	10	11	5	7	4	7	10	5	14	11	10	8	10	6	4	5	3	10	10	6	7	6	3	258
Puerperal Fever	2	2	1	2	3	—	—	—	2	—	1	1	1	1	—	—	1	6	5	3	2	—	1	1	3	—	1	1	—	1	—	41
Other Acc. and Dis. of ... Pregnancy & Parturit'n	2	1	1	2	1	1	1	1	—	—	—	1	1	3	1	1	—	1	3	4	1	1	—	2	2	—	1	—	1	—	—	33
Congenital Debility, Malformation, Premature Birth, etc. ...	12	24	31	10	31	14	14	10	12	16	13	22	20	12	9	6	18	37	33	32	26	19	16	9	13	20	21	15	33	7	4	559
Old Age	22	14	16	16	18	19	6	10	10	5	9	14	27	5	11	4	8	16	8	10	15	9	9	8	23	12	18	20	26	6	4	398
Accidents or Negligence ...	10	16	15	5	10	18	6	8	9	7	5	10	8	7	6	8	15	20	27	12	18	12	6	5	5	2	11	10	10	5	5	311
Suicides	2	7	4	4	6	4	1	6	4	2	1	8	2	2	6	—	4	5	4	6	3	4	1	1	7	3	3	4	7	2	2	115
Other Causes	55	47	52	45	66	36	42	20	32	23	31	39	45	24	51	16	47	50	78	55	52	43	22	47	44	30	45	50	41	19	14	1261
TOTAL DEATHS	313	525	507	461	582	431	239	215	280	180	216	373	432	243	321	107	477	554	655	570	473	285	205	252	305	307	403	313	390	149	84	10847
DEATHS UNDER 1 YEAR ...	25	55	65	34	89	26	28	18	17	18	23	56	31	37	22	12	48	97	92	114	87	33	26	30	25	30	40	41	52	19	11	1301
BIRTHS	521	845	845	652	1131	438	613	343	319	201	355	694	598	349	410	177	756	986	1067	936	822	776	264	432	519	397	570	583	790	338	205	17932

TABLE IV.

Deaths under 1 year Registered in, or belonging to, each Ward during the Year ending January 1st, 1927.

Causes of Death.	Acock's Green	All Saints'	Aston	Balsall Heath	Duddeston and Nechells	Edgbaston	Erdington (North)	Erdington (South)	Handsworth	Harborne	King's Norton	Ladywood	Lozells	Market Hall	Moseley and King's Heath	Northfield	Rotton Park	St. Bartholomew's	St. Martin's	St. Mary's	St. Paul's	Saltley	Sandwell	Selly Oak	Small Heath	Soho	Sparkbrook	Sparkhill	Washwood Heath	Yardley	Not Located	City
Measles	1	—	—	1	3	2	—	—	—	—	—	3	—	—	1	—	1	1	3	2	—	—	—	—	—	—	—	1	2	—	—	21
Scarlet Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whooping Cough	—	5	6	3	3	1	1	3	—	—	2	2	1	2	4	—	3	5	3	1	2	2	—	1	1	—	4	3	—	3	—	61
Diphtheria, Croup ...	—	—	1	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	4
Influenza	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—	4
Tuberculous Meningitis ...	—	—	—	—	1	—	—	—	—	—	—	2	—	—	—	—	—	3	—	1	1	1	—	—	1	—	—	—	—	1	—	11
Abdominal Tuberculosis ...	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	2
Other Tuberculous Dis. ...	—	—	—	—	1	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	1	—	—	—	1	1	—	—	6
Rickets	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	3
Syphilis	1	—	—	—	1	1	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	7
Polio-encephalitis	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Encephalitis Lethargica ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Cerebro-Spinal Fever ...	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	4
Meningitis(not tuberculous)	1	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	1	2	—	1	—	—	—	2	—	—	—	—	9
Convulsions	1	3	4	—	4	—	—	—	—	—	2	—	2	1	1	—	1	2	3	2	4	1	1	—	—	3	1	—	—	—	—	36
Bronchitis	—	—	5	4	9	—	1	1	—	1	2	1	2	4	—	1	4	9	3	4	6	—	1	1	2	—	—	2	4	—	—	67
Pneumonia (all forms) ...	3	13	10	7	18	6	6	—	2	—	1	10	4	5	4	2	11	16	16	37	22	3	2	4	2	4	4	5	7	3	—	227
Gastritis	1	—	2	—	—	—	—	—	1	—	—	—	—	—	—	1	2	—	—	—	—	—	1	—	—	—	2	1	—	—	—	11
Diarrhoea, Enteritis, etc.	1	7	3	3	13	3	2	1	1	—	3	8	—	8	1	—	3	16	19	24	12	5	1	7	2	2	1	7	3	4	2	162
Congenital Malformations	1	1	8	4	1	3	2	1	1	1	—	3	1	1	2	1	2	8	6	5	2	3	5	—	3	3	1	4	4	2	—	79
Premature Birth ...	8	17	17	5	16	9	8	8	7	10	9	12	14	8	4	4	13	17	16	20	18	14	7	6	5	13	8	5	22	5	1	326
Atrophy, Debility and Marasmus	2	5	5	—	11	—	2	—	2	1	—	6	5	3	1	—	4	9	10	7	4	2	3	3	5	3	9	5	5	—	1	113
Atelectasis	1	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	4	3	—	1	2	—	—	—	3	1	1	—	19
Injury at Birth	1	—	—	1	1	—	1	1	2	2	2	1	—	—	1	1	—	2	—	—	2	—	1	—	—	1	2	—	2	—	1	25
Neglect (under 3 months)	—	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	1	—	—	—	—	—	—	—	—	—	3	7
Suffocation (overlying) ...	1	—	1	—	1	1	—	2	—	—	—	1	—	1	—	—	1	3	5	1	2	—	1	1	—	—	1	1	—	—	—	24
Other Causes	2	2	3	4	3	—	4	1	—	2	2	4	—	2	2	2	2	2	7	2	5	1	1	4	4	1	3	3	1	—	3	72
All Causes	25	55	65	34	89	26	28	18	17	18	23	56	31	37	22	12	48	97	92	114	87	33	26	30	25	30	40	41	52	19	11	1301

TABLE V.

Cases of Infectious Diseases notified during each week of the year 1926.

Week		Enteric Fever.	Continued Fever.	Malaria.	Trench Fever.	Smallpox	Scarlet Fever.	Diphtheria.	Dysentery.	Erysipelas.	Pulmonary Tuberculosis.	Other Tuberculosis.	Encephalitis Lethargica.	Cerebro-Spinal Fever.	Poliomyelitis.	Polio-Encephalitis.	Pneumonia.	Puerperal Fever.	Ophthalmia Neonatorum.	Total.
Number.	Ending																			
	1926.																			
1	Jan. 9	—	—	—	—	—	30	35	—	8	34	9	2	—	—	—	93	3	3	217
2	,, 16	—	—	—	—	—	26	35	—	13	25	6	1	—	—	1	80	6	6	199
3	,, 23	—	—	—	—	—	19	32	—	14	17	4	1	1	—	—	60	3	5	156
4	,, 30	—	—	—	—	—	37	43	—	18	31	5	3	—	—	—	64	2	5	208
5	Feb. 6	—	—	—	—	—	40	34	—	11	34	9	2	—	—	—	67	1	7	205
6	,, 13	—	—	—	—	—	38	36	—	10	25	9	3	—	—	—	52	1	6	180
7	,, 20	—	—	—	—	—	41	45	—	4	29	7	2	—	—	—	46	3	4	181
8	,, 27	1	—	—	—	—	36	42	—	16	49	6	—	—	—	—	45	4	6	205
9	Mar. 6	—	—	—	—	—	26	39	—	13	37	4	—	—	—	—	41	1	12	173
10	,, 13	1	—	—	—	—	39	46	—	7	35	5	3	—	—	—	42	1	7	186
11	,, 20	1	—	—	—	—	38	55	—	6	31	11	2	—	—	—	53	5	5	207
12	,, 27	—	—	—	—	—	23	35	—	5	29	10	2	—	—	—	40	3	13	160
13	April 3	—	—	—	—	—	44	25	—	12	32	1	5	—	—	—	62	1	4	186
14	,, 10	—	—	—	—	—	40	37	—	9	24	6	2	—	—	—	126	3	3	250
15	,, 17	3	—	—	—	—	22	47	—	3	34	5	2	—	—	—	116	4	8	244
16	,, 24	3	—	1	—	—	30	33	1	12	26	10	1	—	—	—	98	7	13	235
17	May 1	10	—	—	—	—	22	46	—	12	42	6	2	—	—	—	79	2	10	231
18	,, 8	1	—	—	—	—	22	42	—	7	38	6	1	—	—	—	73	6	6	202
19	,, 15	5	—	—	—	—	28	31	—	11	26	3	2	—	—	—	58	—	12	176
20	,, 22	6	—	—	—	—	36	32	—	8	34	10	2	—	—	—	52	2	7	189
21	,, 29	2	—	—	—	—	31	26	—	7	14	7	—	1	—	—	48	4	5	145
22	June 5	—	—	—	—	—	37	31	3	6	33	9	3	—	—	—	62	5	9	198
23	,, 12	2	—	1	—	—	33	34	—	8	32	9	2	—	—	—	36	5	9	171
24	,, 19	—	—	—	—	—	18	32	—	8	22	5	1	—	2	—	28	—	3	119
25	,, 26	2	—	—	—	—	23	32	—	7	24	7	3	—	—	—	30	2	10	140
26	July 3	2	—	—	—	—	36	49	—	8	39	4	3	—	—	—	27	2	3	173
27	,, 10	1	—	—	—	—	32	36	1	5	26	7	2	—	1	1	25	1	9	147
28	,, 17	2	—	—	—	—	42	40	—	3	22	8	5	—	—	—	27	7	10	166
29	,, 24	1	—	—	—	—	31	41	—	7	27	2	—	—	—	—	25	3	16	153
30	,, 31	—	—	—	—	—	30	38	—	4	25	3	3	—	—	—	14	4	10	131
31	Aug. 7	-	—	—	—	—	13	25	—	4	22	3	1	—	—	—	17	3	5	93
32	,, 14	—	—	—	—	—	31	28	—	11	23	4	1	—	1	—	18	—	10	127
33	,, 21	—	—	—	—	—	25	30	—	6	28	5	2	1	1	—	20	4	9	131
34	,, 28	—	—	—	—	—	20	24	—	10	24	10	2	—	1	—	16	3	9	119
35	Sept. 4	—	—	—	—	—	40	26	—	4	25	6	1	—	1	—	18	2	10	133
36	,, 11	—	—	—	—	—	28	32	—	4	24	5	1	—	1	—	28	—	13	136
37	,, 18	—	—	—	—	—	33	24	—	6	15	7	—	—	2	—	19	5	5	116
38	,, 25	1	—	—	—	—	42	33	—	6	23	6	1	—	4	1	25	1	5	148
39	Oct. 2	1	—	—	—	—	35	32	—	4	30	3	—	2	6	—	20	4	8	145
40	,, 9	1	—	—	—	—	45	41	—	7	27	1	—	—	3	—	27	2	5	159
41	,, 16	1	—	—	—	—	45	35	—	8	32	2	3	—	1	—	35	3	4	169
42	,, 23	1	—	—	—	—	41	33	—	11	25	3	—	—	3	—	21	—	6	144
43	,, 30	1	—	—	—	—	47	30	—	11	14	3	1	—	1	—	30	2	8	148
44	Nov. 6	—	—	—	—	—	37	23	—	9	25	2	2	—	2	—	50	3	7	160
45	,, 13	1	—	—	—	—	32	33	—	11	25	3	—	—	1	—	54	3	9	172
46	,, 20	—	—	—	—	—	53	22	—	20	20	4	1	1	1	—	32	6	3	163
47	,, 27	1	—	—	—	—	39	33	—	9	21	7	2	1	2	—	35	1	15	166
48	Dec. 4	—	—	—	—	—	36	31	—	1	33	2	1	1	1	1	38	6	5	156
49	,, 11	—	—	—	—	—	26	25	—	15	25	3	3	—	1	—	45	—	6	149
50	,, 18	—	—	—	—	—	32	36	—	4	22	6	1	1	2	—	79	6	7	196
51	,, 25	—	—	—	—	—	20	42	1	7	26	2	1	1	—	—	36	7	11	154
	1927.																			
52	Jan. 1	1	—	—	—	—	39	37	—	15	16	3	5	—	—	—	105	5	9	235
	Total	52	—	2	—	—	1709	1804	6	445	1421	283	89	10	38	4	2437	157	395	8852

TABLE VI.

Cases of Infectious Disease notified during the Year 1926. *Classified according to ages.*

DISEASE.	AGES.																Totals.
	0-	1-	2-	3-	4-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-	
Enteric Fever	—	—	2	2	—	6	8	8	6	7	5	4	2	2	—	—	52
Continued Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaria	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	2
Trench Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever	6	48	75	114	177	864	266	64	40	36	13	4	1	1	—	—	1709
Diphtheria	28	73	91	131	141	677	274	141	82	107	39	13	6	1	—	—	1804
Dysentery	—	—	—	—	—	3	2	—	—	—	1	—	—	—	—	—	6
Erysipelas	10	8	6	1	2	12	15	27	16	40	64	117	75	43	5	4	445
Pulmonary Tuberculosis	1	6	4	5	7	83	83	142	203	314	257	209	87	15	4	1	1421
Tuberculous Meningitis	8	9	5	3	4	2	3	2	1	—	—	1	—	—	—	—	38
Tuberculosis of Peritoneum and Intestines	2	4	3	3	2	14	9	4	6	8	1	—	—	—	—	—	56
Tuberculosis of Spinal Column	—	—	—	3	1	10	1	1	1	1	1	—	—	1	—	—	20
Tuberculosis of Joints	—	—	—	5	3	12	10	6	3	6	5	1	—	1	—	—	52
Tuberculosis of Other Organs	1	5	3	2	6	39	25	11	6	3	3	1	—	2	—	—	107
Disseminated Tuberculosis	2	—	1	—	2	3	1	1	—	—	—	—	—	—	—	—	10
Encephalitis Lethargica	—	1	2	—	—	8	4	9	4	16	13	22	7	3	—	—	89
Cerebro-Spinal Fever	4	1	1	—	—	1	—	1	1	—	1	—	—	—	—	—	10
Poliomyelitis	4	8	7	6	3	5	1	1	2	—	1	—	—	—	—	—	38
Polio-encephalitis	1	—	1	—	—	—	—	—	2	—	—	—	—	—	—	—	4
Pneumonia	199	233	165	101	81	253	100	137	100	248	288	235	154	95	39	9	2437
Puerperal Fever	—	—	—	—	—	—	—	8	32	84	30	3	—	—	—	—	157
Ophthalmia Neonatorum	395	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	395
TOTAL	661	396	366	376	429	1992	802	563	506	871	722	610	332	164	48	14	8852

TABLE VII.

Cases of Infectious Diseases notified during the Year 1926. *Classified according to Wards.*

CAUSES OF DEATH.	Acock's Green.	All Saints'	Aston.	Balsall Heath	Duddeston and Nechells	Edgbaston	Erdington (North)	Erdington (South)	Handsworth	Harborne	King's Norton	Ladywood	Lozells	Market Hall	Moseley and King's Heath	Northfield	Rotton Park	St. Bartholomew's	St. Martin's and Deritend	St. Mary's	St. Paul's	Saltley	Sandwell	Selly Oak	Small Heath	Soho	Sparkbrook	Sparkhill	Washwood Heath	Yardley	Not Located	City
Enteric Fever	—	—	—	—	2	24	1	1	1	—	—	2	—	1	1	—	—	3	3	2	—	—	—	1	2	—	—	1	1	—	6	52
Continued Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaria	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2
Trench Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smallpox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Scarlet Fever	88	85	68	59	40	44	50	65	32	15	54	78	40	19	51	13	90	53	86	47	40	56	24	34	71	34	96	63	48	99	67	1709
Diphtheria	35	176	60	50	63	71	35	15	26	30	25	95	56	16	32	10	103	58	99	74	107	108	22	22	81	23	97	37	86	35	57	1804
Dysentery	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	4	6
Erysipelas	7	16	16	7	48	13	9	4	4	4	8	21	16	6	15	1	22	21	30	19	16	23	9	1	17	12	17	12	16	11	24	445
Pulmonary Tuberculosis	32	49	82	71	101	35	28	24	37	23	21	49	55	27	22	22	56	75	113	84	74	51	20	37	28	18	45	35	78	16	13	1421
Tubercular Meningitis	1	2	3	1	3	—	1	2	1	—	—	1	2	2	1	—	1	2	—	1	6	2	—	—	1	3	—	—	1	1	—	38
Tuberculosis of Peritoneum and Intestines	—	7	3	2	4	1	—	1	1	—	3	4	1	2	1	1	1	3	8	3	2	—	—	1	1	—	3	—	1	1	1	56
Tuberculosis of Spinal Column	1	1	—	—	2	—	—	—	—	3	—	1	—	—	—	1	3	—	1	1	1	1	—	2	—	—	1	1	—	—	—	20
Tuberculosis of Joints	1	3	1	—	4	—	1	—	—	1	1	5	2	1	1	1	1	5	5	—	3	2	1	1	1	1	4	2	2	2	—	52
Tuberculosis of Other ... Organs	4	1	9	5	9	3	8	1	1	1	—	3	5	2	2	3	4	1	4	5	1	10	3	2	5	2	2	1	9	—	1	107
Disseminated Tuberculosis	—	1	1	—	—	—	—	—	—	1	—	1	—	—	1	—	—	—	1	—	1	—	—	—	—	—	1	1	—	1	—	10
Encephalitis Lethargica	1	1	5	5	6	3	2	—	1	—	1	2	3	3	6	1	1	8	3	5	4	7	1	—	4	2	2	5	6	1	—	89
Cerebro-Spinal Fever ...	—	—	—	1	—	—	—	—	1	—	—	—	—	—	2	—	1	1	—	2	—	1	—	—	—	—	1	—	—	—	—	10
Poliomyelitis	3	2	2	5	4	—	—	—	—	1	—	—	—	—	—	—	—	1	—	1	1	5	—	3	1	1	3	3	2	—	—	38
Polio-encephalitis ...	—	—	—	—	1	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	4
Pneumonia	61	154	136	79	166	78	53	17	58	35	20	110	60	45	47	9	186	162	176	192	154	66	20	34	73	30	56	46	54	27	33	2437
Puerperal Fever ...	9	4	5	5	14	4	5	1	4	1	5	6	5	2	2	3	6	11	15	5	6	4	1	3	10	5	5	3	5	3	—	157
Ophthalmia Neonatorum	3	14	19	16	49	7	3	2	7	1	5	22	6	4	4	1	18	39	43	19	25	21	3	11	6	7	15	2	16	6	1	395
TOTAL	247	517	410	307	516	283	196	133	174	117	143	400	251	130	189	66	494	443	587	460	441	357	104	152	301	138	348	213	325	203	207	8852

TABLE VIII.

Temperature of the Air and Ground, Rainfall, Sunshine, and Wind in each Month of the Year 1926.
Observed at the Birmingham and Midland Institute Observatory, Edgbaston,
by Mr. A. J. Kelley.

Month.	Temperature of the Air.						Temperature of the Ground.		Hours of Sunshine.		Rainfall in Inches.		Days on which 0.01 inch or More of Rain Fell.	Miles of Wind.	
	Highest in the Shade.		Lowest in the shade.		Mean for the Month.		Max. at 1 foot deep.	Max. at 4 feet deep.							
	1926.	Above or below the previous highest. *	1926.	Above or below the previous lowest. *	1926.	Above or below the average. *			1926.	Above or below the average. *	1926.	Above or below the average. *		1926.	Above or below the average. *
Jan.	52°	— 6	18°	+ 7	39.6°	+ 1.3	43.9°	44.3°	29	— 5	3.09	+ 0.97	19	10533	+ 105
Feb.	56	— 6	31	+ 23	43.3	+ 6.2	46.1	44.4	34	— 14	2.21	+ 0.46	15	7921	—1539
Mar.	57	— 13	30	+ 11	43.0	+ 1.8	46.2	45.3	60	— 15	0.62	— 1.31	8	10299	— 146
Apr.	69	— 10	34	+ 8	48.1	+ 3.6	49.0	46.0	82	— 41	2.41	+ 0.67	15	7887	—1596
May	72	— 10	32	+ 1	49.7	— 2.2	54.0	48.2	127	— 36	3.87	+ 1.70	18	9550	+ 766
June	73	— 9	41	+ 3	56.2	— 1.4	57.3	51.0	145	— 11	1.39	— 0.63	10	7487	— 827
July	82	— 10	48	+ 9	62.1	+ 2.8	62.7	53.5	138	— 19	1.82	— 0.67	11	8321	+ 18
Aug.	79	— 15	47	+ 3	61.6	+ 2.4	59.3	54.4	174	+ 29	2.07	— 0.83	14	8591	+ 147
Sept.	83	— 8	39	+ 7	58.4	+ 2.9	61.0	55.2	105	— 5	0.95	— 0.99	11	7055	—1032
Oct.	70	— 9	28	—	46.4	— 2.4	56.2	54.0	77	+ 1	2.38	— 0.34	12	8191	— 766
Nov.	55	— 7	27	+ 7	42.3	— 0.2	46.2	49.2	47	+ 2	5.64	+ 3.51	19	9481	+ 260
Dec.	50	— 7	27	+ 13	39.9	+ 0.5	43.0	47.0	17	— 5	0.41	— 2.33	8	9233	—1355

*In the thirty-nine years 1887-1925.

TABLE IX.

Meteorology and Mortality in each week of the year 1926.

WEEK.					DEATHS FROM						TEMPERATURE						
											of the Air.			of Ground			
No.	Ending. 1926.	Total Deaths.	Deaths under 1 year.	Deaths 65 and up.	Measles.	Whooping Cough.	Diarrhoea and Enteritis under 2.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Respiratory Diseases.	Highest in Shade.	Lowest in Shade.	Mean of Daily Maxima and Minima.	Highest 4 feet Deep.	Horizontal Movement of Air in Miles.	Hours of Sunshine.	Rainfall in Inches.
1	Jan. 9	289	35	107	1	2	6	24	2	60	51°	35°	43°	44.2°	2702	9.0	0.52
2	,, 16	243	40	74	—	5	2	20	3	59	52	18	34	44.3	1921	4.0	0.14
3	,, 23	259	48	94	2	2	3	16	5	69	50	19	37	44.1	2154	9.1	0 .76
4	,, 30	226	27	97	1	2	3	15	1	42	50	34	43	43.7	2889	7.3	0.74
5	Feb. 6	238	45	85	3	3	4	22	2	56	52	36	44	44.1	1442	2.2	0.89
6	,, 13	197	27	75	1	1	6	12	—	37	47	31	37	44.3	1668	0.5	0.67
7	,, 20	242	27	86	—	9	3	31	3	40	55	31	44	44.0	2476	13.4	0.67
8	,, 27	239	20	82	3	—	2	28	3	42	56	40	48	44.3	2379	9.1	0.22
9	Mar. 6	207	25	82	1	4	—	19	4	36	57	31	45	44.8	2953	34.2	0.30
10	,, 13	228	30	76	5	4	2	25	2	31	56	87	48	45.1	3116	16.9	0.05
11	,, 20	190	16	67	1	1	2	20	2	25	54	34	42	45.3	1242	2.3	0.01
12	,, 27	210	24	74	3	5	3	18	2	42	47	30	38	45.0	2328	10.5	0.25
13	April 3	223	20	93	1	2	1	20	3	41	69	33	48	44.2	1560	10.0	0.01
14	,, 10	290	25	105	1	5	2	11	4	60	65	39	51	45.8	1610	19.2	0.21
15	,, 17	275	44	97	1	5	8	23	3	64	63	34	46	46.0	2212	32.3	0.92
16	,, 24	264	23	97	1	—	3	21	2	59	57	36	45	46.0	1774	24.8	0.19
17	May 1	252	25	92	—	3	—	18	1	57	60	37	48	46.0	2162	0.7	1.24
18	,, 8	216	21	68	2	3	—	17	4	43	58	32	45	46.3	2463	25.3	0.59
19	,, 15	241	16	95	2	4	1	21	1	34	57	34	45	46.3	2216	24.4	1.54
20	,, 22	227	27	71	3	3	1	21	8	37	68	34	49	46.2	1610	31.6	0.25
21	,, 29	233	22	89	4	1	4	20	3	46	72	47	58	47.9	1921	30.8	0.77
22	June 5	197	21	69	1	1	3	21	1	38	67	41	54	48.8	2022	37.8	0.47
23	,, 12	183	21	61	3	3	—	18	5	30	73	46	57	49.7	2151	38.0	0.84
24	,, 19	175	20	63	—	1	1	19	4	20	72	47	57	50.0	1517	20.9	0.40
25	,, 26	169	19	54	1	1	2	23	—	16	73	43	56	51.0	1888	35.2	0.00
26	July 3	186	18	66	3	—	2	23	2	14	72	46	60	51.1	1472	55.8	0.06
27	,, 10	164	14	69	1	2	—	10	2	12	75	51	60	52.0	1634	21.8	0.84
28	,, 17	188	22	64	—	5	3	13	4	15	83	53	68	53.0	1407	49.6	0.00
29	,, 24	154	13	54	1	1	2	18	1	18	74	50	62	53.5	2660	20.2	0.78
30	,, 31	160	16	53	1	1	1	18	2	14	72	48	59	53.5	1873	19.7	0.12
31	Aug. 7	165	23	55	1	2	2	11	3	12	75	49	61	53.6	1573	45.2	0.34
32	,, 14	164	14	47	2	5	3	14	1	21	74	48	61	53.9	1999	34.6	1.21
33	,, 21	155	15	60	—	5	1	14	1	18	75	53	64	54.2	2338	28.2	0.29
34	,, 28	167	23	51	3	3	5	15	1	16	74	47	61	54.3	1908	53.8	0.01
35	Sept. 4	159	18	54	2	—	3	12	2	17	79	51	61	54.4	1757	18.9	0.35
36	,, 11	170	26	51	1	3	9	6	—	20	77	53	62	54.8	1279	12.8	0.51
37	,, 18	163	22	69	—	2	9	11	1	9	81	47	61	55.0	2177	43.6	0.00
38	,, 25	159	19	56	—	1	7	13	4	16	83	41	57	55.2	1463	32.0	1.21
39	Oct. 2	164	21	56	—	1	12	14	3	19	69	39	52	54.9	1498	17.7	0.10
40	,, 9	203	35	75	—	1	18	18	4	32	70	44	56	54.0	1833	10.9	0.98
41	,, 16	183	32	72	1	2	14	19	2	21	61	39	49	53.9	2294	16.1	0.63
42	,, 23	166	15	70	—	1	5	15	2	20	51	30	39	53.0	1349	19.5	0.25
43	,, 30	205	18	89	2	2	6	16	—	27	49	29	39	51.2	2140	20.1	0.51
44	Nov. 6	213	26	76	3	2	6	11	2	32	55	27	41	49.4	2079	9.9	1.53
45	,, 13	226	25	85	3	—	7	19	—	42	52	35	43	48.2	2570	19.8	2.16
46	,, 20	208	26	67	—	2	4	12	3	35	53	37	44	47.9	2506	3.9	1.79
47	,, 27	187	25	68	2	2	8	13	4	32	50	31	41	47.9	1402	13.9	0.16
48	Dec. 4	227	29	97	3	4	2	17	—	36	43	31	38	47.6	2128	5.0	0.02
49	,, 11	226	29	92	—	3	5	16	1	36	48	33	41	46.7	1485	5.2	0.14
50	,, 18	255	34	90	5	4	3	17	3	43	47	27	38	46.1	2089	4.3	0.21
51	,, 25	231	30	100	1	2	1	19	2	51	47	30	37	46.0	2753	3.1	0.03
52	1927. Jan. 1	286	45	116	2	2	1	18	1	87	50	34	43	45.4	2160	2.7	0.01

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